IDG .net

Project management medicine?

IT managers like FedEx's Larry Sisemore hope Web tools can bring order to chaos. **60**

Comdex frenzy

Show-goers see PCs as future device hubs, while Linux draws a crowd. **16, 17**

COMPUTERWORLD

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To the Y2K ramparts!

'WAR ROOMS' WILL MONITOR MILLENNIUM ROLLOVER

By Thomas Hoffman

AS THE FOCUS on the millennium-bug problem moves from the data center to the boardroom, a growing number of companies — including Sears and Prudential — are establishing year 2000 war rooms to monitor crisis-management activities.

For now, Sears' command post is Watkins' office: "a war cubicle"

In these command centers, senior management and millennium project teams will try to keep tabs on the progress of year 2000 tasks such as testing milestones and supplier-readiness through next year.

In some cases, the war rooms, furnished with video-conferencing equipment and computer-generated maps, will also help project teams monitor regional power outages and other localized operations affected during the millennium rollover.

But assigning people to run year 2000 command centers can have a downside, in that it pulls them away from their normal tasks, said Phil Murphy, an analyst at Giga Information Group in Cambridge, Mass. "There's a yin and yang to that," he said.

Still, the command center idea is especially appealing to multinational companies seeking to monitor operations across the globe during the century change, Murphy said.

For example, Textron Inc., an aircraft and industrial manufacturer in Providence, R.I., is considering setting up a command center. One reason is to anticipate the year 2000 impact on its U.S. operations after observing the impact of the rollover — which will occur earlier in various time zones — in places such as Australia, said Sandy

Y2K ramparts, page 83

Now it's cost-cutting time

▸ DaimlerChrysler merger complete, IT looks ahead

By Bob Wallace

WHAT LUCK. As DaimlerChrysler AG races off toward its newly merged future, it has already dodged what could have been five to 10 years of integration work because Chrysler Corp. and Daimler-Benz AG use the same computer-aided design system and SAP AG financial applications.

With that nightmare avoided, new CIO Susan Unger still faces tough decisions on what to cut: The two automakers pledged during their May nuptials to slash $1.4 billion in the first year of the merger and $3 billion more during the next three to five years

Cost-cutting, page 82

THE MANY FACES OF THE H-1B PROGRAM

▸ Some guest workers feel exploited, others happy in U.S.

By Barb Cole-Gomolski
BELLEVUE, WASH.

SUPPORTERS OF THE H-1B visa program say it fills high-tech talent gaps in the U.S. with happy-to-be-here foreign workers.

Critics say it turns them into underpaid indentured servants doing the dirty work in software factories.

Interviews with more than a dozen H-1B workers show that the reality is more complicated.

H-1B program, page 24

Aditi Corp. software engineers (from left) Santhosh V. Mathew, Vinayak Karnataki and R. C. Anand said they don't feel exploited

JEFF ALTEPETER/MERCURY PICTURES

ROI presses CIOs to retool

▸ Tech duties drop as business input grows

By Barb Cole-Gomolski

AS CIO OF Commercial Financial Services, Chris Horrocks spends about 75% of his time as a member of the company's senior management team and 25% of his time communicating the business goals to IT.

Horrocks is an example of where many see the CIO role heading: to an exalted spot where the opinion of the top information technology manager weighs heavily in key business decisions.

To be sure, the job requirements still include an understanding of technology and business issues, but leadership and communications skills continue to gain importance, observers said.

For instance, during his four years as CIO at Staten Island University Hospital, Rick Carney has become instrumental in helping the hospital select acquisition targets. "A lot of the

CIOs, page 83

OIL INDUSTRY

Crucial IT will escape the ax as belts tighten

By Julia King

PLUMMETING OIL prices are forcing several of the largest U.S. oil companies to slash 1999 spending in half-billion-dollar increments, but IT is expected to escape relatively unscathed.

The consensus seems to be that cutbacks in information technology would only make a critically bad situation worse in an industry so highly reliant on state-of-the-art systems.

Computers figure squarely into virtually every moneymaking and cost-cutting operation in the oil industry, from pinpoint-

Oil industry, page 82

Those flippin' recruiters . . .

Think your IT staff is safe from corporate raiders? Think again. A controversial new recruiting technique called flipping, could be used to target your Web site and secretly find out who your most valuable players are and how to reach them. **IT Careers, page 67**

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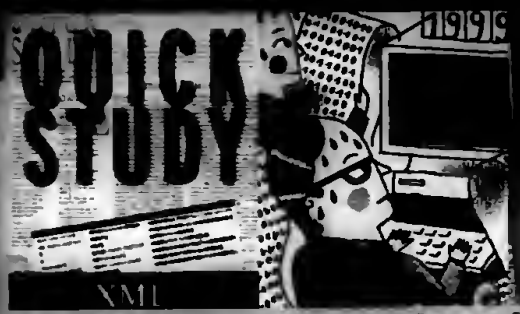

XML can help you define document types, making it ideal for sending forms over the Net. **QuickStudy, page 29**

Racing toward the millennium, companies scramble for ancient source code; most find it. **Software, page 53**

Excerpt from the book Microsoft's defense lawyers would like to get their hands on. **In Depth, page 65**

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News summary for senior managers

■Using a controversial technique called "flipping," some headhunters are worming their way through corporate Web sites onto intranets and the personal Web sites of employees. From there, they can secretly identify the IT staffers they want and target them. The practice isn't widespread, but technical recruitment conferences offer seminars on its use, so it may become more common. Some IT people dislike the practice, which doesn't appear to be illegal. But even companies that are flipped never know it — until later. Page 67

■IT experience often translates well to jobs in finance, where analysis skills are at a premium and an MBA isn't always necessary. We talked to three people who love the mix of money and technology: The money's good, the jobs are interesting and there's no end to career possibilities. Page 71

■Many companies are establishing year 2000 war rooms — often fitted with videoconferencing equipment and global maps — to combat problems during the run-up to 12/31/99. Others are set to take over operations of other centers if they fail; some planners plan to be on vacation as we roll over to a new millennium, but most will be on duty. Page 1

■The holidays will test online shopping services, which may not be up to the volume requirements, analysts said. It's probably too late for massive upgrades, but analysts recommend checking into subsystems and security, load balancing and outsourcing. Page 4

■Purchasing and finance managers find tremendous payback in online buying systems, but getting them to work is furiously complicated, and some complain they can't get any help from IT. Support flows to projects with the CEO's backing, but J. C. Penney is one example of a company that wasted years scraping for resources. Page 14

■Business managers often demand dancing sprites and other multimedia tweaks that often gum up a Web site, and require development resources that are in short supply. Though it doesn't appear on the screen, the real work happens on the back end. Organizing IT staffers like a production line and managing expectations helps. Page 62

■A year after Sears dedicated a group of HR people to its IT department, it found turnover dropped from 13% to 9%, it's saving money on consultants, the IT people are getting better training and their career paths are improved. All those benefits may help IT weather its next crisis — the boss just took a job at BankBoston. Pages 39, 4

■The Thomson Corp. is a $1.6 billion publishing company so diversified that when one division negotiated a good purchasing contract, the rest of the company rarely knew how to take advantage of it. A new extranet connects purchasing managers, saving 13% on newly negotiated corporate deals — for a savings of $60 million so far. Page 45

Catch up with last week's conference – there was plenty of talk about just-in-time training and the technology and business issues faced by trainers.

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"If they can put a man on the moon, why can't they solv my company's IT probl ms?"

We did. And we can

Holiday shopping challenge: Keeping site running

▸ *Heavy traffic will cost unprepared systems*

By Bob Wallace and Sharon Machlis

ANALYSTS PREDICT that this year's online holiday shopping season will pull in double or triple last year's revenue. But those record-setting loads could break electronic-commerce systems that weren't built for such heavy shopping traffic.

"We expect to see, after Thanksgiving, a certain number of sites [fail]," said George Mathew, a Web consultant at Fort Point Partners Inc. in New York, which has done work for retailers such as J. Crew Group Inc. "[Some] retailers out there are going to have some significant issues with their systems."

Such breakdowns will cost some companies part of the estimated $2.3 billion that shoppers are expected to spend online this holiday season.

But although it's probably too late to revamp system architecture in time for Christmas, experts say there are still steps technology managers can take to avoid major mishaps.

"Be aware of subsystems that might surprise you," advised David Fry, director of Fry Multimedia in Ann Arbor, Mich., which does Web design and hosting work for Eddie Bauer Inc. and Spiegel Inc., among others.

Many sites are beefing up their connections to credit-card authorization systems, for example. And some turn off real-time credit-card processing at peak volumes so customers don't have to wait for authorizations, Fry said.

By switching to batch processing, orders are accepted "on faith" and shoppers are notified later if their cards didn't clear, he said.

Other key technical issues include the following:

■ **Security:** That means installing a secure firewall between the LAN on which Web servers reside and the LAN in the company on which order-entry and inventory-management systems reside, said Tom Nolle, president of CIMI Corp., a Voorhees, N.J., technology assessment company.

And by using special, private addresses for those internal systems, hackers can't get in because the Internet routers don't recognize them and hence can't pass on the addresses, he said.

■ **Adapter cards:** To provide redundancy within a Web server, managers can install multiple special adapter/software combination devices. If one fails, it passes all traffic to its neighbors in the blink of an eye, said David Paul Lightener, an analyst at Dataquest, a San Jose, Calif., research firm.

That keeps the failure of a single and inexpensive adapter card from taking down a sole Web server, he said.

■ **Load balancers:** Companies looking for redundancy and better performance from Web sites with multiple servers should consider load-balancing products. Load balancers communicate with servers to see which is busiest and send calls to the ones that are least busy, maximizing server efficiency, said Ted Julian, an analyst at Forrester Research Inc. in Cambridge, Mass.

And if a server goes down or needs to be serviced, the load balancer knows and directs calls to online servers only, he added.

■ **Web hosting:** Managers who don't think they have big enough pipes to their Web site can contract with Internet service providers, which have more robust networks, to host portions of their Web pages for 30 days or so, Nolle said.

With that approach, shoppers can browse online catalogs but only use bandwidth on the pipe back to the retailer when they perform a transaction.

Outsourcing Web hosting to Internet providers could prove to be an attractive alternative to buying and installing additional pipes. That's because it's getting late to order lines and have them installed, which can take weeks, analysts agreed. □

Tips for handling heavy holiday retail traffic

- **Test! Simulate high numbers of online shoppers, both browsers and buyers.**
- **Tune your back-end database to handle more simultaneous connections.**
- **Don't add resource-hogging features such as collaborative filtering in November or December.**
- **Consider using cookies instead of dynamically generated pages to track user session data.**
- **Install multiple adapter cards to provide Web server redundancy. Consider load-balancing products to spread traffic across multiple machines and route it around any downed servers.**
- **If traffic could overwhelm your Internet pipeline, investigate temporarily housing some of your site with an outside Internet service provider.**

Prepping for the onslaught

Relentless advertising has become as much a part of the holiday season as wreaths, trees and lights. But when it comes to Web advertising, there's such a thing as too much success.

So software seller Cyberian Outpost discovered in February, after inking a deal with America Online Inc. and watching its traffic soar. The site was running on technology that had been installed in 1995.

"It wasn't scalable, and we found out very quickly," said President and CEO Darryl Peck. "Customers couldn't get through. We couldn't get through to the site most of the time. . . . We said this is never going to happen to us again."

The Kent, Conn., company revamped parts of its Web site, changing code to make it easier to add capacity. There's also more hardware, with the goal of servers not running more than 30% of capacity at peak traffic. "We actually have spare [Sun Microsystems Inc.] boxes sitting here," he said.

But Peck made another decision as well. When the company begins to implement cutting-edge personalization technology as part of a redesigned Web site debuting this week, he plans on adding one feature at a time, not many at once. And, he said he will forsake a major marketing blitz.

"I am ecstatic we're getting ready to roll this out. I thought the day would never come," he said. "But there won't be one worldwide press release." — Sharon Machlis

CORRECTION/PREMIER 100

Because of a printing error in the Nov. 16 Premier 100 supplement, the column headings (titles) on the last two columns of the Premier 100 tables were transposed. The column headings should have read in the order as follows (see above): Percent of Projects on Time/on Budget and Percent of Projects Internet-Related. The corrected tables can be viewed online at: *www.computerworld.com/premier100*

Percent of Projects on Time/ on Budget	Percent of Projects Internet-Related

CIO checks out at Sears

▸ *Smialowski created 'compelling' workplace*

By Thomas Hoffman

SEARS, ROEBUCK AND CO. last week unexpectedly lost its CIO of four years, Joseph Smialowski, who left the Chicago-based retailer to become executive vice president of technology and operations at BankBoston.

Smialowski, 50, is credited with having guided Sears' use of sophisticated data warehousing technologies, which helped fuel the retailer's "Softer Side of Sears" fashion sales growth by identifying cross-marketing opportunities with customers for both hard and soft goods.

But perhaps Smialowski's most lasting accomplishment during his four-year tenure at Sears was his ability to nurture leadership among his lieutenants.

POSITIVE ENVIRONMENT

Smialowski created an information technology environment at Sears where "you feel a responsibility to meet a person's career goals," said Keith Watkins, vice president of information systems services at Sears.

Smialowski wasn't available for comment last week. But in an interview two weeks ago with *Computerworld*, he said his goal as CIO was to make Sears' IT department a more compelling place to work.

That, in turn, could make Sears a more compelling place to shop. Smialowski also tried to make it clear to each IT person how his job contributed to the business.

Smialowski will join BankBoston Dec. 1. He will be responsible for both worldwide and domestic IT operations. Smialowski's position is newly created, reflecting the banking company's "continuous desire" to unify its global technology investments, said BankBoston Vice Chairman Bradford H. Warner, who will be Smialowski's new boss.

Michael Lezenski, BankBoston's chief technology officer, resigned from the company earlier this year following his decision to find "more of a small-company, entrepreneurial" environment to work in, Warner said. □

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Sun granted injunction in Java suit

▸ *Win is key for Sun; Microsoft reconsiders whether to bother with Java*

By Kim S. Nash

SUN MICROSYSTEMS INC. won a key round last week in its lawsuit against Microsoft Corp. over Java. Catching Microsoft off guard, the ruling prompted the vendor to reconsider — then reaffirm — its commitment to the development language.

A federal judge in San Jose, Calif., granted Sun's motion for a preliminary injunction to stop Microsoft from shipping a Java version that doesn't comply with Sun's specifications. Sun had demonstrated a reasonable likelihood that Microsoft's Java contract "does not authorize Microsoft's extension of the Java language" and modifications to the Java language compiler, Judge Ronald Whyte said.

Sun plans to roll out Version 1.2 of Java next month, but Microsoft won't get it. Sun has refused to ship the upgrade to Microsoft because it claims Microsoft's tools don't comply with Sun's specifications.

NO MORE WORRIES

Chris Baggett, assistant vice president of Web development at First Data Merchant Services Corp. in Hagerstown, Md., cheered the court order. "Now that Microsoft will be forced to comply with the Sun specs, we won't have to worry anymore. We'll be able to deploy applications" across platforms, he said.

The key thing Microsoft was ordered to do, within 90 days, is rewrite its Java to comply with Sun's rules or distribute Sun's Java Native Interface.

Microsoft may also have to change some Java compiler instructions to conform to Sun's rules, Whyte said, but he hasn't issued a final ruling on that yet.

Immediately after the ruling last week, Microsoft suggested that it might drop support for Java altogether. But officials later said Microsoft would support Java as long as programmers wanted it (see boxed story at right).

Users won't be affected by any changes to the vendor's Java tools, promised Paul Maritz, group vice president of platforms and applications at Microsoft. Existing applications built with Microsoft's Java will be able to run with any future Java products from Microsoft, Maritz said. Microsoft doesn't have to recall any products, he added.

Sun sued Microsoft in October 1997, saying that the modifications Microsoft made to Java, to make it work better with Windows, breached the contract between the two vendors.

JUST ONE STEP

A trial is expected to be scheduled for next year, but Sun claimed victory in last week's preliminary ruling.

Microsoft "hasn't modified its behavior in years. If a company chooses to ignore what a contract says, you have to go to the legal system," said Bill Joy, vice president of research at Sun. He added that Sun would still "like to work with" Microsoft.

Microsoft officials were disappointed. "The court believes Sun has the better side of the contract interpretation argument," said Tom Burt, a Microsoft lawyer.

He noted that this is one stage in what is likely to be a lengthy case. "We're still hopeful that as we get all the facts out . . . he'll change his mind." □

Senior editor Carol Sliwa and executive editor Maryfran Johnson contributed to this report.

Microsoft wants to 'innovate' Java

Microsoft views Java as a productive programming language and will continue to support it as long as it can make enhancements that improve it, the company's director of product management for development tools said last week.

But Tom Button acknowledged that J++ developers do face the potential risk that the company will lose interest in Java if it can't "innovate" the language independently of the dictates of Sun Microsystems.

Button was reacting to a ruling in Sun's suit over Microsoft's Java license; among the judge's requirements was that Microsoft include a warning that the lawsuit could hinder its ability to continue its Windows-oriented implementation of Java.

"Our intent is to support Java and make it a great Windows programming tool," Button said.

No other programming language is controlled by only one vendor, he said.

Microsoft may be holding out a threat of dropping support for Java if court rulings go against the company, but it isn't likely to follow through, said Larry Perlstein, an analyst at Dataquest in San Jose, Calif. — David Orenstein

Boeing says Microsoft forcing browser switch

By Patrick Thibodeau
WASHINGTON

UNTIL LAST WEEK, corporate user concerns about Internet browsers were barely mentioned in the U.S. vs. Microsoft Corp. antitrust trial.

But then came Scott Vesey, an information systems manager at The Boeing Co.

Through videotape and documents, Vesey testified that in 1995 Boeing had standardized on Netscape Communications Corp.'s browser and was using an early version of Windows 95 on its desktops that didn't include Internet Explorer. The company selected Netscape's Navigator because it could run across all its platforms, he said.

'WE DO NOT HAVE A CHOICE'

But Vesey, in a July memo offered as evidence, said Seattle-based Boeing would have to move to Microsoft's Internet Explorer in the second and third quarters of next year.

"We do not have a choice," Vesey wrote. "The integration between Internet Explorer and the desktop operating system cannot be fully disabled." Supporting two browsers on the desktop would increase costs, he said.

Computer maker Gateway, based in North Sioux City, S.D., also wanted the ability to remove Internet Explorer, according to evidence introduced at the trial. "We want [Microsoft] to provide us with the technology, not make decisions and choices for us or our customers," wrote Gateway executive Jim VonHolle in an April E-mail message to Microsoft.

Microsoft accused the government of highlighting only companies that supported its case. Government attorneys offered no apologies.

Companies generally are reluctant to support two browsers on a desktop. For instance, Chevron Corp. moved two years ago from Netscape to Internet Explorer on its 30,000 desktops because it was less expensive to have one vendor, Microsoft, handle all of its desktop applications. Service and support contracts "are the biggest cost of ownership that you have in a company," said Jim Lisiak, a technology planner at the San Ramon, Calif.-based company.

The government called its next-to-last corporate witness last week, IBM executive John Soyring, who argued that Microsoft created barriers that ultimately hurt IBM's OS/2 operating system.

The trial now is shifting to the expert testimony of economists. Frederick R. Warren-Boulton, chief antitrust economist during the Reagan administration, argued last week that Microsoft has a monopoly in operating systems (something the company denies) and its practices threaten consumers.

But Eugene Crew, an antitrust attorney at Townsend & Townsend & Crew LLP in San Francisco, said U.S. District Judge Thomas Penfield Jackson's decision will be made on the evidence. "He's not going to let an economist change his mind," Crew said. □

Java ruling may aid antitrust case

The preliminary injunction issued against Microsoft last week on its use of Java (see story at top) will be exploited by the U.S. Department of Justice in its antitrust case against Microsoft.

But it isn't certain what impact that will have on U.S. District Judge Thomas Penfield Jackson.

"It clearly will have some influence," said Caswell Hobbs, an antitrust attorney at Morgan, Lewis & Bockius LLP in Washington. Even so, federal judges "are proud of their independent thinking," he said.

David Boies, the lead government attorney, said federal court action in the Sun Microsystems Inc. case will be cited in briefs and arguments. "The finding in California gives material help to what we are trying to establish here," he said.

The government has cited Microsoft's Java implementation as an effort to diminish Sun's Java threat to the Windows operating system. But Tom Burt, associate general counsel at Microsoft, said the injunction was too narrow to be of any help to the government. — Patrick Thibodeau

Microsoft to sell its 10% stake in RealNetworks

▸ *Sale of shares could fetch $127 million*

MICROSOFT CORP. said it plans to sell its 10% stake in Internet video company RealNetworks Inc. — and make a tidy profit on the deal.

Though Seattle-based RealNetworks was started by former Microsoft executive Rob Glaser, the two vendors have had a rocky relationship since Glaser testified against Microsoft at a U.S. Senate hearing in July.

He accused Microsoft of intentionally disabling RealNetworks' software because Microsoft offers a competing video product, Windows Media Player. Microsoft denied the charge.

Microsoft bought 3.34 million shares of the start-up in July 1997, before it went public, for about $30 million.

At press time, 3.34 million RealNetwork shares would fetch $127 million. — *Kim S. Nash*

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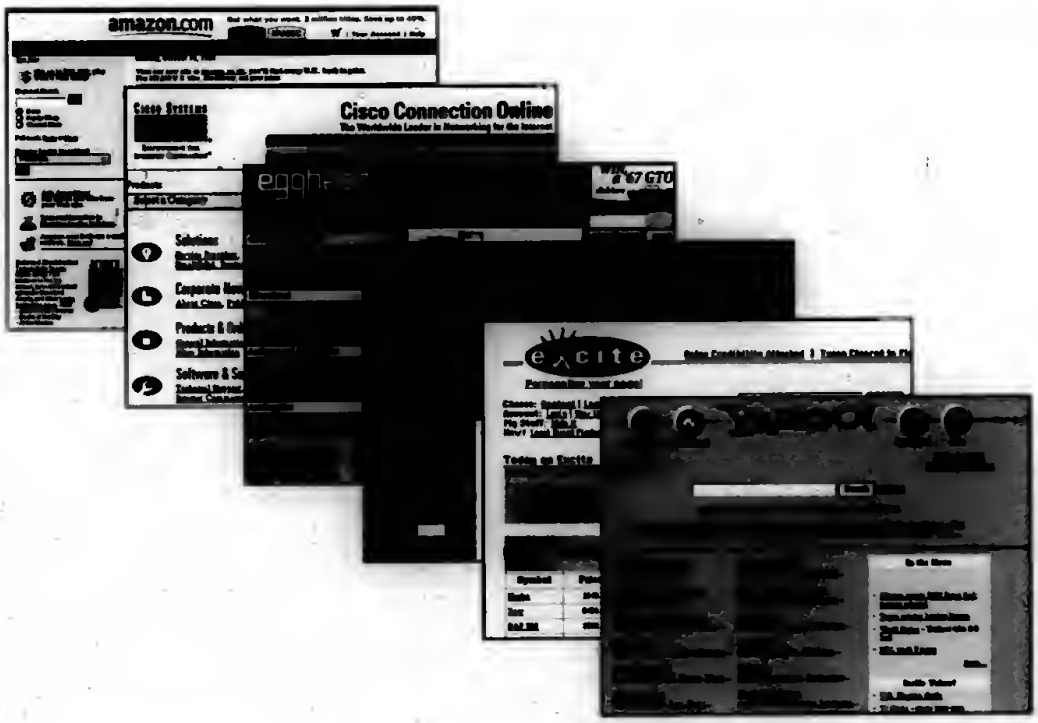

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Users clamor for Win 2000 security

▸ *NT successor must live down reputation, live up to Microsoft promise*

By Sharon Gaudin

WHILE A 30-member security team toils behind the scenes, corporate users are eager to hold Microsoft Corp. to its promise that Windows NT 5.0 will be the most secure Windows operating system yet.

For Isaac Applbaum, CEO of Concord, Calif.-based Concorde Solutions Inc., the information technology subsidiary of Bank of America, getting better security is the Holy Grail of his business. He added that he would like to see that coming from NT.

Although Microsoft Corp. touts the upcoming Windows 2000 (previously known as NT 5.0) as its most secure operating system yet, corporate users say they want the company to do more than beat its own record. They're expecting high-level security now that Microsoft has set its own bar so high.

And Chris Christiansen, a security analyst at Framingham, Mass.-based International Data Corp. (IDC), goes a step further. He said Microsoft's customers are going to want a product as secure as the best operating systems out there. IDC is a sister company to *Computerworld*.

"I would be highly surprised if NT 5.0 was as secure as IBM's OS/390, for instance," Christiansen said. "OS/390 is used in high-risk environments, and it's decades old. Microsoft isn't known for security like that, but eventually, customers will want that."

Meanwhile, the skeptics await proof.

"They're bringing in a whole new set of technologies and trying to make them that secure? I'm skeptical," said Mike Riley, director of Internet application development at Chicago-based R. R. Donnelley & Sons Co.

"The amount of code going into NT is pretty substantial. . . . If they come out of the gate with a huge security flaw, it's going to secure the belief that Microsoft has a tough time with security," he said.

"There's so many millions of lines of code in NT 5.0, so there's millions more places for it to fail," said Carl Howe, director of computing strategies at Forrester Research Inc. in Cambridge, Mass. "They're really setting themselves up by making this 'most-secure' claim."

> **"We have read virtually every network resource and kernel, and we go back through them several times."**
>
> **– Lars Opstad, Microsoft NT group**

NT has long been criticized for poor security, and in the past year, Microsoft has been credited with making some strides in that area. However, the company's security swat team faces an unusually big challenge — 35 million to 50 million lines of code piling up at the doorstep.

Compare that with the 12 million lines of code in Sun Microsystems Inc.'s new Solaris 7.0.

A little more than a year ago, Microsoft deployed its 30-member swat team to systematically scour lines of code in a search for flaws or holes that would open the door to attacks on the network. Also targeted was dirty code that would let someone read or change files, shut down the system, illegally manage it or authenticate a user without the proper identification.

Swat-team member Lars Opstad, test lead for the NT group, said the group focuses on network entry points, such as Server Message Block, a file-sharing protocol and Internet Information Server points.

"We have read virtually every network resource and kernel, and we go back through them several times," Opstad said. Part of the problem for Microsoft, he said, was that "Hackers focus more on NT now because it's more mainstream. In the NT 3.1 or 3.5 days, picking on an NT server wasn't that big a deal because you had to find one first."

According to IDC figures, NT is indeed easier to find. IDC predicts that Microsoft this year will do $8.9 billion in NT sales out of a total operating system market of $73 billion, roughly 10% of the market share.

And IDC estimates that by 2002, NT will garner $25.6 billion of a $102.5 billion operating system market — or just under 25%.

Meanwhile, Jason Garms, the product manager for NT security who runs Microsoft's triage and prevention efforts, said combating the hackers is the whole focus of his job. So much so that he even hires some of the people who have been able to hack into NT-based networks.

"I've hired some hackers," he said. "We don't hire malicious hackers. We do background checks on them. We'd rather have somebody who could do that but chooses not to."

Garms said he has even run into the problem of not being able to hire a good hacker because he was too young to have a college degree or any work experience. □

KEEPING YOUR NETWORK SAFE

Tips from Microsoft's Penetration Team:

- **Educate users** so they know that passwords should be a combination of numbers, letters and punctuation marks – and shouldn't be kept on a sticky note on their desks
- **Don't run untrusted applications** – get patches straight from the vendor
- **Tell users to lock down their workstations** whenever they leave their desks
- **Limit access** to critical hardware – don't keep critical data on laptops, make sure E-mail servers and mission-critical servers are locked away
- **Back up data continually**

NDS integration to bolster Cisco lineup

▸ *Active Directory also in company's plans*

By Sharon Gaudin and Bob Wallace
LAS VEGAS

CORPORATE USERS hope the teaming of Novell Inc.'s directory services with Cisco Systems Inc.'s networking products will mean easier and cheaper network management.

Novell announced at Comdex/Fall '98 here last week that it'a integrating its Novell Directory Services (NDS) into several of Cisco's management packages. Cisco plans to ship two products with NDS by the middle of next year: Cisco Network Registrar IP Registration Service, and User Registration and Tracking Service.

What the Cisco/Novell deal means

- Integrate Novell Directory Services into Cisco's networking products
- First integrated products should ship mid-1999
- Two service packages will be first to ship
- Novell unveiled a Java applet that acts as a translator between NDS and Cisco routers

Adding NDS will complete a Cisco policy networking package designed to prioritize network traffic by application and set access rights on a per-end-user basis.

"In terms of creating a single point of management, it would be very helpful," said Ken Roos, manager of information technology at Aon Risk Services Inc., an insurance brokerage in Chicago.

"Instead of managing my routers separately, if I could go into NDS and manage everything, that would certainly save time . . . and money," he said.

As much as Roos would like a single point of management, NDS still isn't a clear choice. Microsoft Corp. would like to see its Active Directory — which will be part of its upcoming Windows 2000 (formerly NT 5.0) operating system — move into the same space in the networking management market. Despite its partnership with Novell, Cisco plans to help Microsoft get there.

Cisco officials reaffirmed their commitment to Microsoft's long-anticipated Active Directory, which is a key component in the networking giant's Cisco Network Services/AD package, due in mid-1999 at the earliest.

> **"If I could go into NDS and manage everything, that would certainly save time . . . and money."**
>
> **– Ken Roos, Aon Risk Services**

Windows 2000 has no ship date as of yet but generally is expected a year or more from now.

"It's kind of a crapshoot right now," Roos said. "I'm not sure if I would jump on Active Directory or go with NDS. I would definitely have to evaluate both."

Several analysts noted that corporate users are eager to tie together their management tasks and may not be willing to wait for Active Directory.

Mary Petrosky, a principal analyst at Petrosky.com., a San Mateo, Calif., consulting and research firm, said this gives NDS a head start.

"Even if [Active Directory] ships by midyear, people will not do large deployments until late 1999 or early 2000," Petrosky said. "It'd be nuts for people to use a '.0' release."

The Novell/Cisco announcement came one week after Novell licensed NDS to Nortel Networks and confirmed that it's also in talks to do so with Cabletroo Systems Inc. and Ascend Communications Inc. [CW, Nov. 16]. □

Mainframe makers shift to service market

By Jaikumar Vijayan

IBM'S ONLY mainframe rivals — Hitachi Data Systems and Amdahl Corp. — last week announced separate reorganizations meant to make them less dependent on mainframe sales.

The reorganizations come even as mainframe demand continues to be strong. But although sales are up, IBM is getting most of the business, analysts said.

Impact IT, a mainframe consultancy in Mountain View, Calif., predicts that IBM will ship 343,000 MIPS in the fourth quarter vs. 238,000 in the same quarter last year. The industry as a whole is expected to ship 439,000 MIPS in the first quarter of next year.

As part of its restructuring, Santa Clara, Calif.-based Hitachi is laying off 400 employees and investing more in nonmainframe hardware and service activities.

Meanwhile, Amdahl, in Sunnyvale, Calif., announced the creation of two groups. The Global Solution Group will focus on delivering a range of highly specialized consulting and information technology integration services; the Technology Group will build the actual systems in collaboration with parent company Fujitsu Ltd. in Japan.

Amdahl's reorganization accelerates its move away from hardware and toward consulting. Last year, nonhardware sales contributed more than 67% of Amdahl's revenue.

Hitachi's restructuring indicates that the company is anxious to broaden its product portfolio at a time when rapidly falling mainframe hardware prices are putting tremendous cost pressures on both IBM rivals, said Charlie Burns, an analyst at Giga Information Group in Cambridge, Mass. □

Fidelity cuts IT staff, contractors

By Robert L. Scheier

FIDELITY INVESTMENTS INC., the Boston-based mutual-funds giant known as a pioneer user of information technology, has eliminated about 25 IT positions and its contracts with 68 outside software developers.

The cuts aren't part of a wider layoff strategy and don't signal a reduction in IT spending, said Fidelity spokeswoman Anne Crowley. She said the cuts earlier this month resulted from the early completion of projects in Fidelity's 8,700-person Personal Investments & Brokerage Group, which sells mutual funds and other investment to individual customers and runs a discount brokerage.

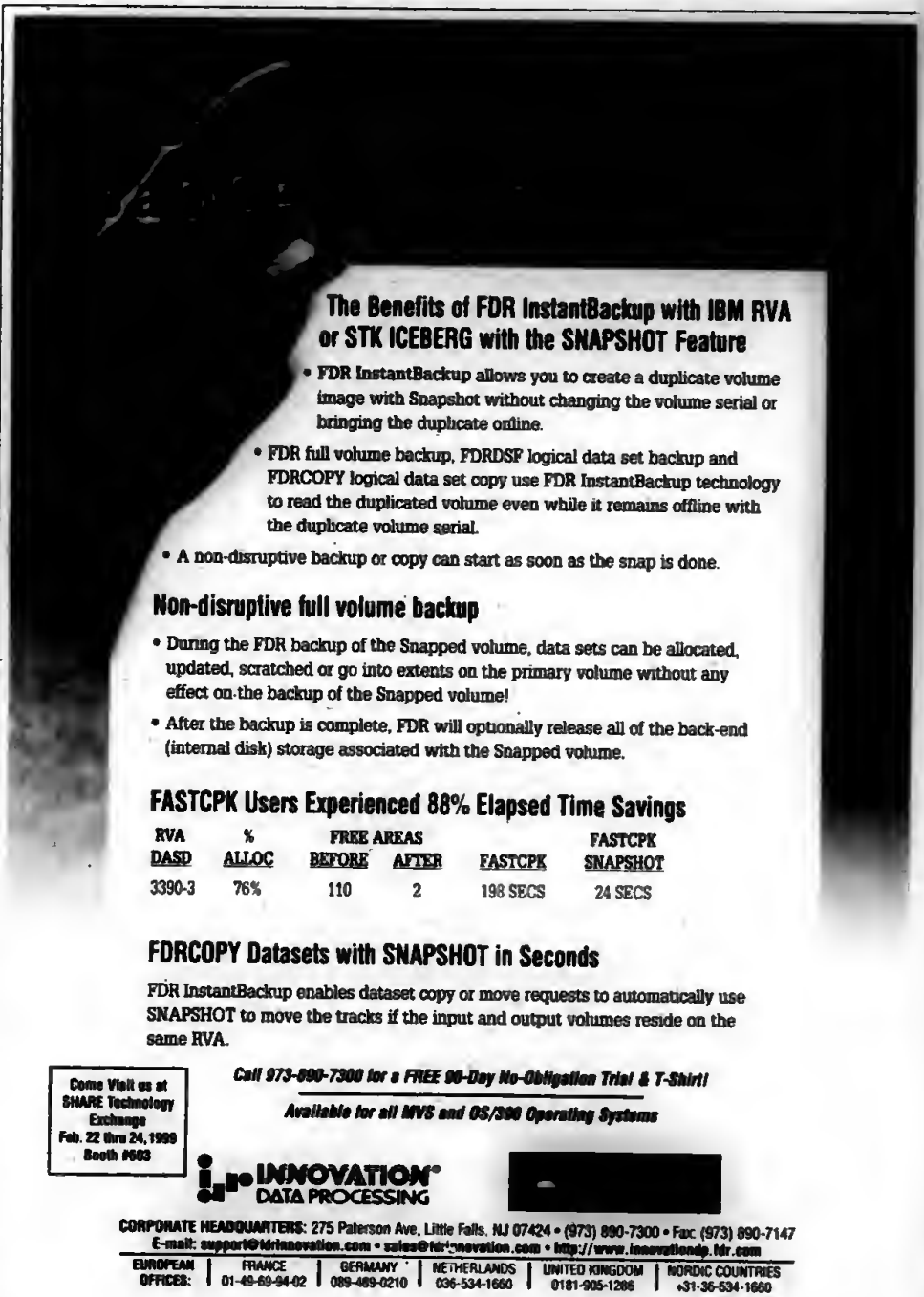
"I would tie it more closely to the market downturn and the [poor] third-quarter results of the stock market."
— Larry Tabb, The Tower Group

"At any given time, you're going to have systems projects coming to completion," which leads to the reassignment of employees or the elimination of positions, Crowley said.

Most of the 25 employees affected are expected to find work elsewhere in the company, Crowley said, because Fidelity has several hundred open IT positions.

"I would tie it more closely to the market downturn and the [poor] third-quarter results of the stock market, than to a major shift in technology initiatives . . . within Fidelity," said Larry Tabb, a securities and investment practices analyst at The Tower Group Inc., a Newton, Mass., consultancy.

"As assets get drawn down from their mutual funds [as stock prices fall], there's tremendous pressure to cut expenses," Tabb said. □



Global ERP rollouts present cross-border problems

By Craig Stedman

CORNING INC. EXPECTS to need five to eight years to roll out enterprise resource planning (ERP) software to all 10 of its diversified manufacturing divisions.

AlliedSignal Inc.'s automotive turbocharger unit had to postpone an ERP installation at its Asian operations to meet deadlines in the U.S. and elsewhere.

And Meritor Heavy Vehicle Systems LLC recently transferred a team of 15 U.S. employees to Europe for up to nine months to eliminate time-zone differences causing communication breakdowns among ERP project workers.

For those manufacturers and others, the lure of a global ERP system that ties together all of their plants is difficult to resist. But putting ERP applications in place worldwide can be a draining job.

"If you manage a global ERP installation the right way, it can work," said Monte Nuckols, vice president of information technology at Meritor. But the process "can be brutal," he said in Boston last week at an AMR Research Inc. conference on ERP.

The complexity of global ERP projects was one of the top agenda items at the conference. Nuckols and other executives in the midst of such rollouts said the hurdles they face range from bridging cultural differences to balancing corporate standards against the need to tailor software for different plants.

But the potential benefits — year 2000 compliance, common systems and business processes, improved data analysis capabilities and more — make the difficulties worth enduring, they said.

Jeff Smith, worldwide vice president of IT at AlliedSignal Turbocharging Systems in Torrance, Calif., said replacing 110 old applications with SAP AG's R/3 software should help the $1 billion unit do a much better job of filling orders and meeting delivery commitments.

But it took a team of 20 employees from around the world six months of working together in Paris to develop a standard R/3 configuration, Smith said.

And earlier this year, he said, R/3 work in Asia was delayed until next spring "because we just didn't have the [resources] to do six concurrent projects in six different languages."

TOUGH TO GET IN SYNC

AlliedSignal also is being forced to synchronize R/3 across multiple servers and databases in different regions. R/3 is strong on functionality, "but it's not architected to support a true global implementation" on one database, Smith said.

Troy, Mich.-based Meritor, a $3.3 billion maker of braking systems and other automotive components, will run into the same synchronization issues next year when the heavy-vehicle unit extends Oracle Corp.'s ERP software from Europe to the rest of the world, Nuckols said.

About 20% of the code being installed in Europe was customized to cover differences among plants, such as order-entry procedures, Nuckols added. And Meritor's U.S. plants are expected to be even more reluctant to change business processes, he said.

Corning installed PeopleSoft Inc.'s financial and human resources applications in a standard configuration for all its sites. But PeopleSoft's manufacturing software will have to be deployed separately at each of Corning's product units, said Rick Beers, a strategic process leader at the Corning, N.Y., company.

For highly diversified manufacturers, forcing common ERP on each plant may not be feasible. AMR Research analyst David Caruso questioned companies' ability to "to stay with an ERP implementation for five years or more." □

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FRANKLY SPEAKING

Kicking the Java habit

FRANK HAYES

Maybe it's time for Microsoft to walk away from Java. Yeah, I know — not many people at Microsoft will take that suggestion seriously. Microsoft's Internet Explorer Web browser without Java? Get serious. Microsoft's Java development tool: Visual J++, off the market? Ridiculous. I must be joking, right?

Nope. Visual J++ may be worth salvaging as a cash cow, but Microsoft should jettison the rest of its Java efforts. Then we'll all see exactly how fast Sun Microsystems can move Java without software's 800-pound gorilla behind it to help push.

Why should Microsoft abandon Java now, almost three years after licensing it from Sun and building it in to its Web browsers, operating systems and development tools? Because last Tuesday, a federal judge ruled that Sun probably will win its lawsuit charging Microsoft with using Java in illegal ways. Microsoft now has 90 days to change its products so they pass Sun's Java compatibility tests — or remove Java capability from those products entirely.

And that's not all. The court order also spells out which technologies Microsoft can't add to its products (any new Microsoft Java keywords); words Microsoft can't use in advertising ("official reference implementation"); and even licensing terms Microsoft can't use with other vendors (tying any product — Java-based or not — to exclusive use of Microsoft's Java).

The best option for Microsoft simply is to quit this no-win game.

Microsoft will appeal, of course. And keep on appealing as long as possible. Microsoft doesn't like to lose — in the market or in the courtroom.

But this *is* a losing battle, with high risk and little reward. Barring a reversal, the court order won't change just how Microsoft implements Java — it will change how Microsoft does business. That's a high price for a language the company doesn't really much like, anyhow.

What are Microsoft's options? The company could fix its Java implementations to pass Sun's compatibility tests. That would take six months and cost $5 million for Visual J++ and at least three months for Windows 98. It also would gut Microsoft's strategy for grabbing control of Java by flooding the market with the Microsoft version.

Or Microsoft could try cloning Java to replace the Sun Java code in its products or buy a Java clone from, say, Hewlett-Packard. But that probably wouldn't satisfy the court order, which specifically applies to Microsoft products that contain, implement or even *emulate* Java.

No, the best option for Microsoft is to simply quit this no-win game. After all, Java no longer is such a threat to Microsoft. Three years ago, Java had runaway-train momentum; now it's just chugging along.

Microsoft can even get full Java support for free in Windows 98, NT and Internet Explorer. Sun is already doing that work with its Java Plug-In, an ActiveX control that replaces Microsoft Java with Sun's version. If Microsoft walked away from Java today, it would be Sun that would have to integrate each new release of Java into the operating system. Sun, not Microsoft, would take the flak for any bugs, incompatibilities or delays.

Microsoft doesn't need Java. And the dirty little secret everyone at Microsoft knows is that Java isn't the future of Internet development, anyway. ActiveX didn't beat Java, but dynamic HTML will, or maybe XML or some technology yet unknown. Java is just a language. Bill Gates says so.

So Microsoft should support Java as a language if it likes, with Visual J++. But beyond that, staying with Java just doesn't make sense for Microsoft.

And that's no joke. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

SHORTS

Porn law blocked

A federal judge last week issued a temporary restraining order that blocks a new Internet "child protection" law. Judge Lowell A. Reed Jr., in the district of Eastern Pennsylvania, said civil liberties advocates' constitutional challenge to the Child Online Protection Act was likely to succeed. The law prevents "knowingly" posting material "harmful to minors" for profit, but critics say that interferes with First Amendment-protected content aimed at adults.

Judge: Gates hurts own cause

Bill Gates isn't scoring any points with Microsoft Corp. antitrust trial Judge Thomas Penfield Jackson. The judge last week told defense attorneys that Gates, in videotaped deposition excerpts, "has not been particularly responsive to his deposition interrogation." Jackson — who has laughed not loud at Gates' efforts to avoid answering a question — said the problem with Gates' deposition is evident on the faces of his defense team. "Everybody at your table has reflected skepticism as the testimony is presented," said Jackson to Microsoft lead attorney John Warden in a closed-door conference Thursday. Microsoft asked Jackson to stop the government from playing "bits and pieces" of the deposition, according a court transcript. Jackson rejected Microsoft's motion. Outside the courtroom, lead government attorney David Boies said Gates, in his critical public comments "seems to be indicating more and more that he'd like to come" and testify.

More Microsoft temps sue

Microsoft Corp. is facing a new legal battle from temporary workers seeking benefits given to permanent employees at the company in a lawsuit filed Nov. 17. The 10 plaintiffs were hired after 1990. An attorney representing the workers said he will seek class-action status for the suit to cover thousands of workers. A previous lawsuit, in 1992, covered about 300 people who worked at the company from 1987 to 1990. Microsoft declined comment on the lawsuit.

Barnesandnoble.com posts loss

Internet bookselling hasn't hurt overall revenue at Barnes & Noble Inc., but its Barnesandnoble.com Web venture lost money in the quarter ended Oct. 31. Barnesandnoble.com lost $20.5 million from ongoing operations on sales of $17.2 million (up more than three-fold from a year ago and 38% from the prior quarter). Meanwhile, online rival Amazon.com Inc. is selling gadgets, games, toys, personal electronics and videos. Amazon.com stock rocketed more than $22 per share to $148.50 the day the new products appeared on the site.

Gates announces font system

In his keynote address at Comdex, Microsoft Corp. Chairman Bill Gates announced ClearType, a font technology designed to improve screen readability. Gates said it should increase display resolution by as much as 300% and should work well on LCD devices, including desktop flat panels, laptops and handhelds.

Microsoft eyes Windows fee

Microsoft Corp. confirmed last week that it has considered charging an annual fee for its Windows software. A December 1997 memo describing the proposal was collected as evidence in the antitrust suit brought by the Department of Justice against Microsoft. Adam Sohn, a Microsoft spokesman, said the idea for the licensing is just that — an idea — and "not even close to reality at this point." Sohn said the idea is one of many proposals at Microsoft concerning sales.

PCI-X workgroup formed

The independent standards body governing the proposal for a new extension of PCI aimed at servers, dubbed PCI-X, is expected to issue a press release today saying a workgroup has been put in place to finalize the standard. The workgroup will consist of 14 companies. Compaq Computer Corp. will chair the workgroup. The PCI-X standard is based on a 133-MHz bus vs. the current 66-MHz PCI bus, which increased throughput to improve memory access. The standard is expected to be released by the middle of the first quarter of next year; products should follow by midyear.

SHORT TAKES Baan Co. last week said founder and former CEO Jan Baan, who gave up his management job in July, has decided not to seek a seat on the company's board.

CONTRACT OF THE WEEK

Customer: Aerolinas Argentinas
Prime contractor: The Sabre Group Inc., Fort Worth, Texas.
Terms: $120 million, 10 years
Highlights: Sabre Group will take over all information technology operations at one of Argentina's largest airlines. This is the third airline outsourcing contract Sabre has signed in the past nine months; the others were with Gulf Air in Bahrain ($165 million) and US Airways Group Inc. in Arlington, Va. ($4 billion).

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[1]Source: Data during this time frame: Jan. 1–June 30, 1998. IDMS, Sept. 4, 1998; [2]Source: The Radicati Group, July 1998.
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Online purchasing can be a hard sell

▸ *Issues include payback, prioritizing, support*

By Carol Sliwa

THE COMPANIES immersed in online procurement projects swear by them, claiming they expect to see a multimillion-dollar return on investment.

But some purchasing managers remain skeptical about the payback, and others are struggling merely to get the information technology department's attention, as more pressing year 2000 and enterprise resource planning (ERP) projects consume IT time and resources.

The online buying systems typically are driven by purchasing and finance managers "because they can achieve a return on investment in one or two years, if not months," said industry analyst Vernon Keenan, president of Keenan Vision Inc. in San Francisco.

"Getting IT to prioritize [your project] is the most difficult thing," said Ann Benson, a purchasing project manager at Life Technologies Inc. in Rockville, Md. She said "you have to get upper management onboard" before trying to enlist IT participation in the project.

Her company is starting to dabble in online procurement, testing the waters with Pittsburgh-based Fisher Scientific Co., one of the biotechnology company's prime suppliers. But IT's prime focus for the past three years has been implementing its J. D. Edwards & Co.'a business software, Benson said.

To gain IT's support, Roy Anderson, director of purchasing at John Hancock Mutual Life Insurance Co. in Boston, tried a few test projects to show how his department could help IT. He convinced IT that his department should take over the purchasing of PCs and IT contract labor. That shift not only saved the company money through better negotiated deals and consolidation of suppliers, but it also freed up IT staffers to concentrate on their primary jobs.

ALL ABOARD

Then when Anderson's purchasing department wanted to implement a new intranet-based corporate purchasing system, it got upper management and IT onboard. At least six Hancock departments participated, in addition to four full-time Hancock employees devoted solely to the project and five professional service staffers from Netscape Communications Corp., Hancock's software provider.

From planning to launch, the project took 10 months.

Contrast that with J. C. Penney Co.'s On-line Buying System, dubbed JOBS. With just three staffers developing the new custom client/server software, a project targeted for 18 months took four years to complete, according to Cynthia Wynn, a J.C. Penney purchasing manager in Dallas.

Wynn said Penney could have used six to 10 people, including a system analyst as a liaison between the purchasing and programming staffs.

"We knew what we wanted to do. We needed somebody to interpret it to the programmers," she said.

But several purchasing managers report that they aren't being consulted on IT projects, and in some cases that could lead to problems down the road. For instance, an ERP system someday might need to be integrated with online procurement packages. □

Laptop speeds approach desktops

By Matt Hamblen

INTEL CORP. expects to produce a Pentium II processor for mobile computers late next year that will briefly match the peak performance of desktop PCs. That's likely to entice more companies to convert from desktop to portable machines, observers said last week.

But users and analysts said there are other factors affecting the conversion decision, such as the need for laptops to have better security, longer battery life, brighter screens, comfortable keyboards and less weight.

Intel told analysts on Nov. 13 that a new manufacturing process late next year will allow production of mobile Pentium II chips that run at 600 MHz (see chart).

"Faster processing time would matter to a large portion of our appraisers and abstract writers out looking at real estate," said Chris Behning, vice president of MIS at General American Corp. in Pittsburgh. The nationwide company processes reports from more than 30,000 third-party appraisers and abstract writers, then provides the information to lenders.

Most of those professionals write their reports, drive to an office, input the data and then fax a printout. In a year or two, Behning said, the process could be done with laptops and attached digital cameras and complex real-estate programs — but that will require faster processors and long-life batteries.

Jim Ranager, systems administrator at the State Fire Academy of Mississippi in Jackson, Miss., said faster mobile processors "will clearly make a difference" because staff members on the road expect to run spreadsheets and multimedia applications as if they were working on a desktop PC.

But there will always be a place for some desktop PCs, especially for clerical staffers who don't leave the office much, technology managers said.

Ken Dulaney, an analyst at Gartner Group Inc. in San Jose, Calif., said flat-panel monitors will keep desktop PCs alive for a few more years because they are brighter than notebook screens and take up less space than conventional monitors.

Top Intel processor speeds for laptop and desktop computers

	1998	1999	2000
Desktop	450 MHz	500 MHz*	600 MHz*	1 GHz*
Laptop	300 MHz	366 MHz*	600 MHz*	600-plus MHz*

*Projected

Source: Intel Corp., Santa Clara, Calif.

But he said the conversion to mobile computers seems inevitable. "In a few years, the desktop vs. notebook debate will be a moot point. People will choose a notebook because of flexibility, and smallness will matter more as office cubicles get smaller," Dulaney said. □

Notebook sales to slow next year, report says. Page 58

Dell gives nod to Beta 3 of Windows 2000

By Sharon Gaudin

AFTER YEARS of development, Microsoft Corp.'s Windows 2000 still doesn't have a ship date, but corporate customers can soon get a beta version preloaded in new Dell Computer Corp. PCs.

Round Rock, Texas-based Dell confirmed late last week that it will ship desktops preloaded with Beta 3 versions of Windows 2000, previously known as Windows NT Workstation 5.0. Beta 3, slated to be the final beta, is expected in the first quarter of next year, said Craig Beilinson, Microsoft's Windows 2000 Professional product manager.

A Dell spokesman said the company is already shipping PCs to a few corporate customers with the Beta 2 version of Windows 2000, but he declined to identify the customers. He said the company intends to ship some desktops with Beta 3 to customers who request it when Microsoft makes it available. The spokesman declined further comment.

Dell Computer Corp. is ahead of the Windows 2000 bandwagon

- Dell has shipped PCs preloaded with Windows 2000 Beta 2
- Dell has plans to ship PCs with Beta 3 when it's available
- Beta 3 is expected to ship in the first quarter of 1999
- The official Windows 2000 release date hasn't been announced

It's highly unusual for a vendor to ship machines with beta software, but this instance is an indication of the interest surrounding Windows 2000, said William Peterson, an analyst at International Data Corp., a *Computerworld* sister company in Framingham, Mass. Buying a computer with preloaded beta software can be risky, he said.

"It's shocking, but some companies will do that. They'll want to try it on and start testing. But why not just get free beta software? I guess I don't really get it," Peterson said.

PRELOADING

Beilinson said preloading beta software on new PCs isn't exactly part of Microsoft's plan. He said he isn't aware of any other PC manufacturers preloading Windows 2000 and added that such a deal isn't something Microsoft is trying to promote.

"If large corporate customers want Windows 2000, there's multiple ways of getting the beta themselves," he said.

"If they're a large company, they are probably a beta tester or are part of Microsoft's Developer Network and can get it there," Beilinson said. □

Senior writer April Jacobs contributed to this story.

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Net management is changing

▸ *It's more centralized and specialized*

By Sharon Gaudin
LAS VEGAS

A YEAR AGO, Community College Southern Nevada in North Las Vegas had six IT departments to manage three main campuses and six satellite locations. If a student lost a computer icon, someone went out to find it. If a server was acting up, someone was there.

Today, those six information technology departments have been condensed to two, with end-user and network support handled from a central location. A year from now, IT workers expect to be tracking network traffic down to the specific end user.

Users and analysts at Comdex/Fall '98 last week said corporate network management and support has gone from hands-on coverage to a centralized situation in which IT pros are farmed out to critical jobs to build applications instead of baby-sit systems.

KEY STRATEGY

"How we manage the network has become a key corporate strategy," said Stuart Kippelman, manager of research and development for Johnson & Johnson in New Brunswick, N.J. "We're looking at how to integrate it into almost everything we do."

At the show, Microsoft Corp. sought to wind users up for its long-anticipated Active Directory, which will be part of Windows 2000. And Novell Inc. touted its Novell Directory Services (NDS), which shipped with NetWare 5.0. Novell also promised an integration of NDS with Cisco Systems Inc.'s networking products (see related story, page 8).

Elisabeth Rainge, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*, said the vendors are focused on centralized management.

"Users are using the network more. Companies are more dependent on the network than ever. . . . That means there's more and more management tasks. Centralizing those efforts is key. It's all got to be in one place. It's what everyone's doing," she said.

"The way we manage has changed enormously," said Thomas Wilson, network analyst at the 32,000-student college. "We do things a lot more centrally, a lot more remotely. Completely different than we did even a year ago. And it's snowballing."

Ken Roos, manager of IT at Aon Risk Services Inc., an insurance brokerage in Chicago, said central administration and remote administration swept through his company about a year ago.

"I worry that it will all get rolled into a corporate office and they won't need me in the field any more," Roos said, then laughed. "Well, I guess I need to change occupations anyway." □

Network management news out of Comdex:

- Novell's NDS for Windows NT is expected to ship in about two weeks
- NDS for Unix is on the drawing board
- Cisco is integrating NDS into its networking products
- Cisco is still working to integrate Microsoft's Active Directory into its products
- Version 1.1 of Novell's ZENworks administrative tool is shipping

PCs face inroads from mobile devices

▸ *Desk systems must morph into information hubs for smaller devices*

By April Jacobs
LAS VEGAS

THE DESKTOP PC will remain the productivity tool of choice in corporate America for the foreseeable future, but it increasingly will have to share the glory with a wide variety of thin clients and handheld devices.

In fact, users and analysts said, the desktop PC will have to adapt to a new world in which it acts as information hub for mobile devices. That hub, they said, would be a single point of contact management and processing for everything from smart phones and pagers to handhelds.

Brian Brumit, a director at PricewaterhouseCoopers in New York, said PCs will have to adapt to offer reliable connections for end users who are traveling both on the ground and in the air. The connection should work for multiple computing devices, he added.

"The PC is going to become more of a utility in the future, because we are all going to be connected somehow — whether through satellite or phone," Brumit said, noting that people's desire to have access to information whenever and wherever they want is driving companies to find ways to make connecting more reliable and easier.

"In five years, I think . . . [PCs] are going to become a lot more utilitarian. A portable PC is going to be truly portable, probably a little bit larger than a tablet," said John Dunkle, an analyst at Workgroup Strategic Services Inc. in Portsmouth, N.H.

CENTRAL HUB

"Desktop devices are going to have to be designed so they will accommodate intelligent portable devices [and become] the hub for all other devices," he said. For example, end users have information stored on various portable devices — from voice mail on smart phones to addresses and phone numbers in handhelds — and can't combine and manage that information easily. Addresses and phone numbers are accessed through handhelds, while smart phones and pagers contain voice mail.

The desktop PC is "going to have to change and evolve, or die," said Glenn Bonner, CIO at the Bellagio hotel here, which uses thin clients (see related story, page 57). "The device of choice for people is going to depend on their application needs," he said at a Comdex event. Essentially, Bonner said, users will adopt technology that fits their needs as it becomes available, rather than conforming to traditional means if it proves reliable. For example, at the Bellagio, thin clients proved to be more cost-effective than PCs.

Paul Tinnirello, senior vice president of information systems at A. M. Best Inc., an insurance consultancy in Oldwick, N.J., said senior executives at his company have computer tablets. That's because a trial run with handhelds proved they're too difficult to use as data-processing devices.

Tinnirello said the PC as people know it today "probably won't exist" five years from now. What will replace it? The smallest device that can function like a PC — with speech and voice recognition.

"There will have to be change," he said, "because people are going to be wired and they are going to be mobile." □

Linux presence slight, but interest growing

By David Orenstein
LAS VEGAS

THE PRESENCE of Linux at Comdex last week was a lot like its presence in corporate information technology: small and somewhat buried, but still a compelling draw for a large and diverse group of professionals.

Out of 2,249 exhibitors, only 16 listed themselves as predominantly Linux-related. Most of them were tucked away in a cramped space in the middle of Comdex's discount show floor at the Sands Hotel.

But the popularity of Linux helped create the cramped conditions. The faithful and the curious mobbed each booth and squirmed past one another, looking for the latest developments or just a basic idea of what the open-source operating system can do for them.

Silver Oaks Communications Inc., an audio, video and prepress production company in Moline, Ill., uses Linux for its file servers, E-mail servers and Web hosting, said president Greg Scott, who along with employee Mark Weitzel had just paid a visit to the booth of Linux vendor Red Hat Software Inc.

Linux servers provide a stable and versatile bridge between the company's PCs and Macintoshes and has let the company revive older 486-based PCs. The operating system has performed flawlessly, Weitzel said.

Linux has found a home in some very large companies, including an E-mail server at Home Savings of America, a savings bank based in Irwindale, Calif., that was recently acquired by Seattle-based Washington Mutual Inc. Linux has performed so well that there's little thought given to Windows NT, said Rick Snyder, a senior systems analyst at the bank. "Why would you go anyplace else?"

Other corporate users — such as Howard Vaughn, director of operations technology at Tribune Education, an educational publisher and subsidiary of The Tribune Co. in Chicago — were investigating Linux as a Windows alternative. "We're pretty much stuck on the Microsoft highway," he said. "Sometimes it's good, sometimes it's bad, but there [has been] no choice."

But Linux isn't for everyone. Alvaro Espinoza, a network manager at Save Mart Supermarkets Inc. in Modesto, Calif., was scoping out the Linux market at Comdex but wasn't convinced that the supermarket chain should reevaluate its commitment to SCO Unix in its stores.

Espinoza said the partnership between The Santa Cruz Operation Inc. and IBM gives him a good feeling about available support compared with that of the smaller companies currently backing Linux. □

Fighting intranet flak

▸ *Benefits await if political battles are won*

By David Orenstein
LAS VEGAS

THE PROMISED benefits of a good intranet aren't hype; they're real. But what's just as real, intranet managers confessed at a Comdex/Fall '98 panel here last week, are the political bargains and battles to make intranets compatible with a corporate culture.

Within Colgate-Palmolive Co.'s research unit in Piscataway, N.J., IS director Forrest L. Jerome encountered heavy resistance to the idea of sharing sensitive data, especially after some managers with data-security concerns failed to grasp the distinction between an intranet and the wide-open Internet.

The ideals of an intranet also weren't reflected in the corporate culture, he said. "We thought we were engaged in silo busting . . . [but] the organization was engaged in silo construction."

Some managers became so resistant to the intranet, Jerome said, that they would invent false arguments against it. That resulted in occasionally rancorous exchanges that Jerome acknowledged he could have handled more deftly. "Don't do as I did and call someone a blithering idiot," he told the Comdex audience.

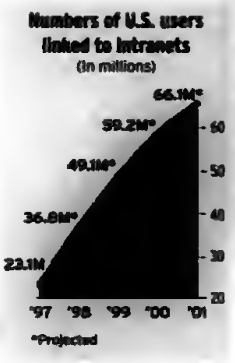
The intranet at Amoco Corp.'s Chemical Intermediates Business Group in Lisle, Ill., was a dream come true for information technology manager Kerry Given because it has provided myriad cost- and time-saving benefits. But, like Jerome, Given first had to convince managers that sharing information with other departments would be s benefit.

The tools for sharing are now firmly in place, but the culture of sharing is still evolving, Given said. "A lot of product managers don't particularly want to share their marketing plans with other product managers. The intranet technology is very significant in that it is beginning to break down some of those barriers."

Before users began to share, Given said, they had to be convinced that publishing data and strategic documents is safe: "In this area, we're having even more security concerns than normal simply because of all the publicity [about hackers]."

The benefits of the intranet are many, Given said. The platform-independent user interface supports a variety of clients and provides s friendlier front end for managers than SAP AG's R/3. Not only does the network let different departments share information, but the intranet's search feature also lets workers find out what work has already been done at the company.

The intranet reduces storage needs because documents can be posted once instead of copied over and over in departmentwide E-mails, he said.□



& We review Trellix 2.0, a tool to share information on an intranet. Page 45

Comdex: Small is big; humor abounds

Comdex/Fall '98 brought an infusion of technology, hype and technohysteria to Las Vegas last week. The number of geeks walking the streets — about 250,000 — may have even surpassed the number of Elvises in residence.

Here's a sampling of the news and news wanna-bes:

ASSOCIATED PRESS

Some of the 250,000 who braved the Comdex extravaganza

REPORTER'S NOTEBOOK

TOYS THAT TICKLED US

■**Sceptre Technologies Inc.** got heads to turn with a pair of glasses, of all things. Seems the Industry, Calif.-based LCD monitor maker has developed s top-secret computer monitor: You can read it only if wearing a special pair of decoder glasses.

■**Van Koevering Co.**, s musical instrument manufacturer out of Des Moines, Iowa, tickled the ivories with a little technology of its own. The company showed off its Interactive Piano. Equipped with touch screen, modem link, floppy disk, CD-ROM and hard drive, the piano can simulate, among other things, a singing woman and s church organ — and you can record with it.

■Proving you can never get too small, **Cell Computing Inc.** in San Jose, Calif., demonstrated its credit-card-size 200-MHz Pentium system, which includes s graphics card, 128M bytes of RAM and connections for drives, s keyboard, s mouse and s display.

■Meanwhile, at **Hewlett-Packard Co.**'s booth, **IBM** demonstrated s 340M-byte hard drive the size of s flash RAM card. IBM didn't have its own booth, perhaps because its drives were so small it didn't need the space.

■**Hewlett-Packard** had its own gizmo to hawk: the Capshare, a semicircular handheld scanner about the size of s bagel. It can capture a coherent black-and-white image of a page no matter what crazy path you take when you guide the scanner over it. The device has an infrared port so you can print to an infrared-enabled printer.

A LITTLE STAR POWER

Technology executives apparently know their limits when it comes to holding an audience, so they made heavy use of celebrities in their keynote speeches.

■**Jeff Papows of Lotus Development Corp.** capped off his talk with s long comedy routine by Paula Poundstone.

■**Xerox Corp.** spiced up its keynote presentation with John O'Hurley (J. Peterman on *Seinfeld*) in a toga.

■**Bill Gates** made extensive use of Jay Leno's *Tonight Show* man-on-the-street interviews about technology, and he used footage from MTV's *Celebrity Deathmatch* show to make light of the year's emotional impact on him.

■**Intel Corp.** made perhaps the best use of celebrities, however. In a session titled "Technically Incorrect," hosted by *Politically Incorrect*'s Bill Maher, CEO Craig Barrett yakked it up with Bill Nye the Science Guy and Penn Jillette of Penn & Teller. For good technology measure, however, the panel did include pundit Esther Dyson.

TIME TO CHANGE THE OST

Fresh from getting computer makers to update their PCs to Windows 98, **Microsoft Corp.** is already pushing to get Windows NT Workstation 4.0 as a standard operating system.

At the show, NT spokesman Craig Beilinsen happily volunteered that 13 PC makers — many of whom didn't bother to have booths at the show — are now shipping desktops and laptops with NT 4.0. They include **Compaq Computer Corp., Dell Computer Corp., HP, Gateway and Acer America Corp.**□

Reported by Computerworld reporters Sharon Gaudin, April Jacobs and David Orenstein.

Office embraces intranets

By David Orenstein
LAS VEGAS

BETWEEN THE huge, inflatable Office 2000 box outside the main entrance to Comdex/Fall '98 and the prominent position Microsoft Corp. staked out on the main exhibit floor last week, few visitors were able to escape Microsoft's effort to market Office as the next great intranet publishing suite.

All of the suite's applications — such as Word 2000 and Excel 2000 — can save documents as HTML directly to a Web server as easily as saving to a local hard drive. Current versions save to HTML, the Web programming language, on a local or networked drive.

The premium version of Office 2000 also will include FrontPage 2000, which will let users manage departmental Web sites in concert with the rest of the Office suite and the inherent security features of Windows NT.

But not all intranet managers want every end user with Office to be able to contribute and edit information on the intranet.

"The capability in Office 2000 is not one that makes me happy," said Forrest L. Jerome, information systems director at Colgate-Palmolive Co.'s research unit in Piscataway, N.J. To avoid security breaches, content on the company's intranet needs to be reviewed before it's published, he said.

Kerry Given, information technology manager at the petrochemical maker Amoco Corp., said any end user there can publish to the company intranet, but access is limited to certain content.

Users publish documents ranging from trip reports to strategy documents and technical bulletins. Given said he hasn't seen the Web publishing features in Office yet but would like to.□

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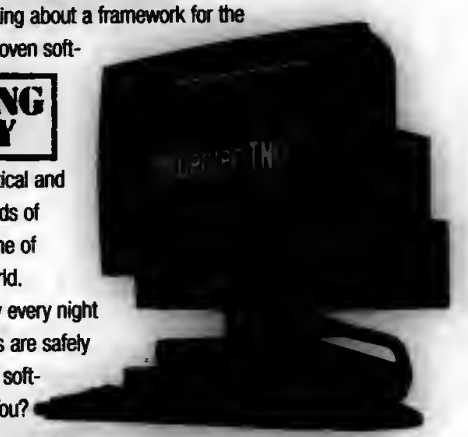

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Rare year 2000 bug could disable older PCs

By Robert L. Scheier

PC TOOL VENDORS and programmers are squabbling over whether an obscure bug could cripple some PCs when the date changes from 1999 to 2000.

Some experts say it's hogwash; some say it's a real threat. The consensus at this point is that the problem is rare and is more likely to occur in older PCs, which should lessen its impact for companies that have updated their PC inventories.

The glitch is called the Crouch-Echlin Effect. Proponents say it's caused by a miscommunication between two components of the PC: the BIOS, which controls basic PC functions, and the real-time clock, which tracks time and other critical settings while the PC is off.

When the PC's system clock is turned beyond the year 2000 and the PC is turned on and off, the BIOS can in some cases misread the information it gets from the real-time clock.

That miscommunication can cause anything from incorrect dates in applications to preventing the PC from functioning, said Mike Echlin, a technical officer at Atomic Energy Canada Ltd. in Chalk River, Ontario. Echlin, along with history professor Jace Crouch at Oakland University in Rochester, Mich., discovered the bug.

"The Crouch-Echlin effect . . . is real," though it hasn't been determined how many systems this affects, said Stephanie Moore, an analyst at Giga Information Group in Westport, Conn. In rare cases, the problem could "scramble the settings in your computer's CMOS memory so that at the next start-up, you can't start the computer or you may not be able to access some of the devices attached," Moore said.

Not so fast, said David Iacino, a senior manager for the year 2000 program at BankBoston. At his lab, where testing includes turning on PCs with post-year-2000 dates and running them for long periods of time, the issue "has not surfaced," and "therefore, I'm not going to pursue it," he said.

COMPAQ INVESTIGATES

Even Compaq Computer Corp., which earlier had said that the problem is real and that it would resell a diagnostic program Echlin is selling, has backed off while it investigates the question further.

The earlier comments were the opinion of one employee at a Compaq year 2000 center in Albany, N.Y., and didn't reflect company policy, said spokesman Alan Hodel in Houston.

Echlin said the bug happens only intermittently on PCs with clocks turned past year 2000 that are turned off and then on. Working out of his basement, he said, he has performed two-week tests on 20 to 30 PCs and finds that about one-third of the PCs he has tested are susceptible to the problem.

Echlin declined to name brands or models that passed or failed his test because, he said, vendors change components so often that one PC may be vulnerable to the problem, while another supposedly identical PC made the same day by the same vendor won't suffer from the bug. Besides, he said, he's worried about being sued by PC vendors.

Many observers agreed that the problem could be eliminated by using a "buffered" real-time clock, which sends its time and other information to a memory buffer rather than directly to the BIOS. Most Pentium-class PCs have such buffered clocks, so they're unlikely to face a problem, said Stuart Greenfield, an analyst at the Texas comptroller's office in Austin. ☐

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H-1B program has many faces

CONTINUED FROM PAGE 1

For software developers who have much-in-demand skills, Kaushik Bhaduri and R.C. Anand, for example, live modestly. In this upscale suburb of Seattle, they share apartments in a neighborhood where most of the residents are, like them, Indians working in the high-tech industry on H-1B visas.

But they certainly don't think they're being exploited.

In a car on the way to lunch, they alternately sang along to taped Indian music and recalled how they competed fiercely for a place in one of India's engineering colleges. Had they stayed in India, upon graduation they might have made an annual salary equivalent to $15,000 in U.S. dollars.

Today, they work as software developers at Aditi Corp., a company founded in 1994 by Pradeep Singh, a former Microsoft Corp. manager who also came to the U.S. from India.

Bhaduri and Anand said they were drawn to the U.S. for the opportunity to work for Singh's company, which provides custom programming and technical support for large companies.

The Aditi employees are among the thousands of highly skilled foreigners who enter the U.S. each year — mainly from India, China and the Philippines — on H-1B visas that let them stay for six years. U.S. companies were recently able to get Congress to approve an additional 142,500 H-1B visas during the next three years.

Many of the H-1B workers are indeed happy to be in the U.S., *Computerworld* found. Their modest lifestyles result, in part, from saving as much money as possible, either to build a nest egg in the U.S. or to send money to family in India.

But it's also true that some H-1B workers feel that their employers are exploiting them.

Some H-1B holders report that they are promised specific jobs but are put "on the bench" when they arrive in the U.S., receiving small allowances of as little as $20 per day until they are sent out on assignment.

And employers often require H-1B visa workers to sign employment contracts with penalty fees of up to $30,000 if they switch jobs before their contracts are up.

Labor groups contend that H-1B workers drag down U.S. salaries and take jobs from Americans. They argue that — with hopes of a green card dangling in front of them — H-1B holders accept low pay, do grunt work and put in long hours without complaint.

JOB-SHOP ABUSES

The U.S. Department of Labor and H-1B workers themselves say that the most frequent abusers of the system are contracting companies, also called job shops or body shops.

Rick, a 25-year-old Briton who doesn't want his last name published, worked as a C++ programmer for a Colorado job shop when he first arrived in the U.S. more than a year ago. He was paid about $35,000, significantly less than the prevailing wage for his skills.

Rick said H-1B workers were sometimes asked to wear pagers 24 hours per day and were pushed harder than U.S. coworkers. He left the agency. Today, he works for a Seattle-based software start-up where he gets better pay and stock options.

Federal law requires that H-1B workers get paid "prevailing wages" commensurate with their skills, but an executive at a major technology contractor said some companies don't follow the rules.

Sushma Rajagopalan, a vice president at Mastech Systems Corp. in Oakdale, Pa., said she can easily hire H-1B workers away from other companies because she offers competitive salaries and training.

"I am paid slightly less [than my American counterparts]," said Manoj Madhavan, a contract C++ programmer at a telecommunications company in Atlanta. The 31-year-old has a master's degree and is paid $45 per hour, but gets no benefits.

"A lot of H-1B workers will tell you that the work we do is boring," says a 24-year-old Java programmer from India.

Madhavan said that in the past, people like him would work for "ridiculously low" salaries. But that's changing, he added. H-1B workers are now jumping ship for better offers as fast as their American counterparts.

A job shop might get a person with a master's degree for $40,000, said Sheela Murthy, an immigration attorney in Owings Mills, Md. "But two months later, that person can be whisked away with an offer of $60,000."

Still, many H-1B workers avoid switching jobs because of the penalties for breaking their contracts, a practice that staffing companies defend.

"People don't like the penalties," acknowledged Jim Thomas, vice president of marketing at Tata Consultancy Services in Dallas, which has nearly 2,000 foreign workers on U.S. assignments. Without a contract, foreign workers could seek employment with another company immediately, he said.

Once they fulfill their contracts, many H-1B workers apply for U.S. citizenship. During that process — which can take four years or more — exploitation can resurface. At that point, workers don't want to switch jobs, for fear of having to start the complex immigration process over again.

That was the case with Sreedhar Vangavolu, a mechanical engineer from India. Once his employer agreed to sponsor his residency, Vangavolu was loath to ask for a raise — for fear of having to start over. His salary didn't change for two years. But "as soon as I got my green card," said Vangavolu, 29, "I switched jobs and got a 20% raise."

"I didn't expect it to be like this," said one 24-year-old Java programmer from India who has been in the U.S. for eight months and is employed by Mastech. "A lot of H-1B workers will tell you that the work we do is boring."

Not surprisingly, few H-1B workers complain to authorities about their pay or working conditions because they fear retaliation from their employers. For fiscal 1998, which ended Oct. 1, the Labor Department got 63 complaints regarding H-1B program violations, up from 48 the previous year. The most recent government review of the H-1B program, done in 1996, found lax enforcement of prevailing-wage rules. Among the cases it investigated, 19% of workers weren't being paid the wage they were entitled to.

The highly critical study said the government's role amounted to little more than rubber-stamping the applications for visas. John Fraser, deputy wage and hour administrator at the Labor Department, said that it's hard for the agency to "go out and poke around" because it doesn't have the legal authority to be proactive.

"The system is complaint-driven, and not too many of these affected workers want to complain," he said.

However, new H-1B rules that were included in the legislation that raised the visa cap could make it harder for companies to exploit these workers, observers said.

Penalties for violating H-1B laws have been increased. There's also a new rule designed to eliminate benching: Employers must find jobs within 30 days for people who come from abroad. Also, employers must not put penalty clauses in worker's contracts to restrict employees from leaving.

Aditi's Vinayak Karnataki said he knows that not all Indian nationals are treated well in the U.S. He's even received calls from people seeking advice on how to get out from under an employer's thumb.

There are abuses in the system, he said. "But part of the problem is that some of these [workers] are shortsighted," coming to the U.S. to earn money fast and maybe get a green card. That's what makes them vulnerable, he said. □

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Who do you want on your side?

Oracle aims to bypass operating systems

By Stewart Deck

ORACLE CORP. is looking for a way to remove users' operating systems worries. The company thinks it may have found the answer with a new program called "Raw Iron."

Under the program, Oracle will team with hardware vendors to deliver specific-purpose database server/appliances — such as an E-mail server on a hardware box, for example — that Oracle will then manage remotely. The appliances will run applications based on Oracle's forthcoming, Internet-centric 8i database, which can store and run complete applications within the database itself.

Making function-specific servers with a trimmed-down operating system isn't a new idea, but Oracle's idea of sliding in a database adds a new wrinkle. Mark Jarvis, Oracle's senior vice president of marketing, said the new database appliances will be available by next April, with a goal of keeping the cost to about $10,000.

Raw Iron would have to run on some flavor of operating system, but the operating system would be tucked away without a direct interface, said Mike Sun, an analyst at Giga Information Group. "It sounds like an interesting idea, but proof of the concept will come when you actually see customers using it and proving it works in an enterprise setting," he said.

If Oracle can put together these different types of devices successfully, "it probably will have wide acceptance," said Peter Kastner, an analyst at Aberdeen Group Inc. in Boston. "The idea is very straightforward. This sounds like the next logical step in the commoditization of function-specific products." ❑

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DOWJONES

SQL Server 7.0 eyes corporate database

By Stewart Deck

A NEW FIGHT for the corporate database market began last week at Comdex/Fall '98 when Microsoft Corp. unveiled its SQL Server 7.0 database at the opulent Bellagio hotel in Las Vegas.

To attract corporate users above the department or workgroup level, this latest version supports clustered servers and includes increased database capacity, management tools, online analytical processing support and row-level locking.

Users who have beta-tested the low-cost database in corporate settings said it performed well, but some analysts are waiting to see whether SQL Server 7.0 will be able to scale to meet large corporate requirements [CW, Nov. 16]. They're wondering if it can handle multiple users reliably, if its capacity has been increased enough to handle a large corporate load and whether NT (which it runs on) can scale up reliably or will someone have to stand by all day just to reboot the servers.

Officials at database rival Oracle Corp. say Microsoft's attempts to enter this new level aren't a threat. "Their database business is peanuts," said Mark Jarvis, Oracle's senior vice president of marketing.

But Oracle made sure to keep its name and the latest edition of its own database, Oracle8i, in the news. It also made a Comdex announcement of its proposed "Raw Iron" project to grab its own piece of Las Vegas database attention (see story above).

SQL Server 7.0 will be available by year's end, company officials said, with pricing starting at $1,399 for the standard edition (designed for departments and workgroups) and $7,999 for the enterprise edition. ❑

& The Bellagio has gambled on extensive thin-client use. Page 57

QUICK STUDY

HOT TRENDS & TECHNOLOGIES IN BRIEF

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XML

DEFINITION: The Extensible Markup Language (XML) is a specification that lets you tag text for a Web-based document. It doesn't describe what the text should look like (that's what HTML, the Web programming language, is for), it gives meaning to text on a page. XML helps structure information in a document to make it "smart." For example, you may have a statement, "The skies today are ..." followed by a variable that would be replaced by the appropriate word ("clear," "overcast," etc.) based on conditions in a database or other data source.

Putting it all in context

By Suruchi Mohan

WHEN DOING A WEB search, you can get hundreds of thousands of hits that are totally irrelevant to your query. Your search engine, which deals only with literal strings of text, doesn't know the context of the text. But if your hits are pages created with Extensible Markup Language (XML), there's a high chance they'll be on the mark. That's because those documents have context programmed in, making Web searches and data gathering more specific.

To do that effectively, documents have to be tagged. Tags are attributes assigned to a piece of information. Document Type Definitions (DTD) define which tags are allowed in a certain type of document. Think of DTDs as rules of grammar, customized to each document, that dictate use of the document tags.

AT ISSUE

XML's potential is yet to be fully realized

David Manning, chief technology officer at UWI.com, an Internet forms company in Victoria, British Columbia, that works on defining business and government forms over the Web, gives the following example: An English literature document might use author, subject, editor and publication date to define the DTDs; then a search engine parser, which interprets the text, would tag *Emily Dickinson* as author. The tag might look like this: <author>Emily Dickinson</author>.

So when you search the Web for *Emily Dickinson*, you won't get every instance of *Emily* and *Dickinson*, which could yield thousands of documents. Instead, you would get documents listing *Emily Dickinson* as an author.

Tim Sloane, an analyst at Aberdeen Group Inc. in Boston, notes that XML, which will be used largely in form-type applications, identifies an object type; so, where an HTML page will give you a title, an XML page will give you a document identification. It can identify, for example, that a page is a special type of object — such as an order page, a package-tracking page or a database-entry page.

That differs from HTML, which gives only a Web address. If the address changes, it's much harder to get to the Web page. Conversely, if the address stays the same and the page changes, you don't know that. Through document identification, XML makes you aware of such changes.

The need to publish on the Web and to make frequent updates is nudging Fred Drake, group manager for documentation and performance-centered design at Shared Medical Systems Corp., toward XML. For 10 years, the Malvern, Pa.-based company has used IBM's tag language, Bookmaster, to publish large, structured technical and user-assistance documents with graphics on CD-ROM, on hard copy and in electronic form. Drake says the company is in the prototype phase of moving toward XML.

Despite user interest in XML, there isn't a huge amount of usage, according to Philip Costa, an industry analyst at Giga Information Group in Cambridge, Mass. One reason is that most browsers don't support it. Also, there are just a few tools available, and they are immature. Another problem is the need for some resolution of standards issues; until then, XML has yet to live out its potential. □

Mohan is a freelance writer in Los Altos, Calif.

GLOSSARY

The following are terms that should be understood when dealing with XML:

Document Type Definition

Describes how a document should be interpreted by markup tags (see Tags). DTDs gives definition to different types of documents. For example, a company's product order form is a different document than a legal document.

Parser

A piece of code that takes an XML document, reads and interprets it and shows it as a navigable object to the application.

Tags

How the document is marked up so it can be displayed. Tags format the data in the document.

Q&A

Emilie Schmidt, chief technology officer for the State of North Carolina, Raleigh, talks about her plans for XML:

Q. What stage are you at with implementing XML?

A. We are just starting an XML pilot, which will take three months.

Q. Why XML?

A. It has a lot of possibilities for us because it seems more flexible and [allows] content reuse that we can't have with HTML.

Q. Does XML raise any issues for you?

A. One key issue for us is the need to learn XML, understand tagging and get agreement on tagging. If everyone tags documents differently, we can't reuse them. [Another issue is to get] agreement on definitions among the 23 agencies.

XML VS. HTML

What XML looks like compared with HTML

XML has some similarities to HTML. Both were derived from Standard Generalized Markup Language, which is a meta language, a language that enables the creation of other languages. HTML is used to display the Web page; it tells what words should be bold or italic. XML gives description to the text.

Plain English	HTML	XML
Sport utility vehicle	<TITLE>Automobile</TITLE>	<AUTOMOBILE TYPE="Sport utility vehicle">
ABC Gremlin 300X SUV	<BODY>	<MANUFACTURER>ABC</MANUFACTURER>
	<UL>	<LINE>Gremlin</LINE>
	<LI>ABC Gremlin 300X SUV	<MODEL>300X SUV</MODEL>
4 passenger	<LI>4 passenger	<PASSENGER UNIT="PASS">4</PASSENGER>
145 maximum speed	<LI>145 maximum speed	<SPEED UNIT="MPH">145</SPEED>
$19,280	<LI>$19,280	<PRICE CURRENCY="USD">19,280</PRICE>
	</UL></BODY>	

Note: The tags were bolded for readability; tags in real HTML and XML documents are not bolded.

■ *Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie_mccann@cw.com*

OPINION

CIO catch-22

You're the businessperson who can talk tech. You're the techie who understands the business. You're the E-commerce leader. You're the Y2K cleanup artist. You're the cost center. You're the revenue generator.

You're damned if you do and definitely damned if you don't. You're the CIO.

Never have so many roles and such escalating expectations fallen onto the shoulders of so few.

A new international study from Korn Ferry (see our story, page 1) of 340 CIOs found that 65% of CIOs believe their job is changing at this very moment. Nearly half of them are sitting on executive committees with the CEO these days, and a bigger chunk of them are reporting directly to the top dog. And guess what criteria are being used to measure their performance? "Management objectives" grabbed 74% of the study's respondents, while only 23% were being judged on "IT metrics."

At Comdex/Fall '98 last week, a panel of CIOs from various industries talked about how central their roles have become in charting company strategy. As one of them bluntly put it: "The trend is to have a businessperson [as CIO] who has a strong understanding of technology. If you're just a technologist, you are not part of the business strategy."

Now, just reading that, I could almost see the hackles rising on IT professionals in key technical positions throughout the Fortune 1,000. Has "technologist" really become a career-limiting label in business circles?

Indeed, the most desirable IT skill sets do seem to be shifting, as the success of corporate intranets and the race to electronic commerce transforms IT departments from cash sinkholes into strategic business tools.

These days, a background in business and consulting is more likely to qualify you for the top technology job.

The irony here is that the business folks may find you not quite credentialed enough, while the IT people won't be impressed by your tech background.

Damned if you do, damned if you don't.

Maryfran Johnson, *executive editor*
Internet: maryfran_johnson@cw.com

LETTERS

CEOs and IT pros must stop pointing fingers at one another

IN "WHAT COMES AFTER 1/1/00?" [CW, Oct. 19], Ed Yourdon asks what would happen if CEOs no longer allowed programmers to write unstructured, undocumented, unmaintainable programs.

Answer?

We would grin ear-to-ear and begin shouting "Oh no! PLEASE don't throw us in that briar patch!"

> The CEOs are going to tell us to grow up? Well, pots and kettles.

Yourdon says information technology professionals owe an apology to those poor CEOs we burned by practicing "cowboy programming" while their backs were turned.

OK, I hereby apologize to both of them.

The rest of the CEOs, however, don't just "allow" cowboy programming, they demand it.

The CEO will no longer "allow" us to lose source code?

Oh, mercy!

But will the CEO stop withholding the resources needed to safeguard it? The CEO will no longer "allow" us to skip documentation and testing? Fine, but will the CEO stop asking us to do so?

According to Yourdon, we might be told not to write another line of code until we have our house in order. Yes, we might. And five minutes later, as any fan of "Dilbert" could predict, we will be told that the company has just expanded the product line by buying a widget plant, and we'd better have the customer support system updated before the calls start coming in.

The CEOs are going to tell us to grow up? Well, pots and kettles.

Brett Middleton
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ABSOLUTELY EXCELLENT to read your article and have the issue of accountability and integrity addressed.

I am not an IT individual, however I am deeply involved with the accountability and integrity of the financial issues within the company where I work.

It is so enlightening to read that one of IT's own is posing the questions regarding IT's ominous power.

These questions, in truth, apply to each and every member of a corporation regarding their area of responsibility.

Bravo! You deserve high praise for simply bringing the obvious to the surface and exposing these issues.

Ronald L. Russo
Houston
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More letters, page 35

Hayes misses the mark on the zero-latency question

FRANK HAYES' column in the Oct. 19 *Computerworld* ["Zero-latency poppycock"] was amusing but a bit wide of the mark.

Hayes' understanding of zero latency appears to be that information systems departments simply connect people and computers together using fast networks and smart, push middleware and then stand back to see if end users can figure out how to get some business benefit out of it.

But nowhere in the field of zero latency is this "throw it over the transom" style of implementation actually practiced.

Hayes' notion that businesspeople can never come through with new ideas and that information technology people understand business processes better than the actual end users could cause damage if taken too seriously. However, I do agree with his point about the need for good up-front analysis. We differ only on whether the analyst who figures the better way is seen as a business person or an IT person.

Ideally, both types of managers should work together to find creative applications for today's new technologies.

Roy Schulte
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Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

Managing misfits is still key 25 years later

Michael Schrage

Gerald Weinberg's classic, *The Psychology of Computer Programming*, had a huge influence on my life. After reading it in high school, I discovered I didn't want to be a computer programmer.

Weinberg's classic endures because it recognizes that organizations are prisoners of their pathologies.

Don't get me wrong: Some of my best friends are programmers, and computer science was one of my majors. But Weinberg's portrait of what programmers did and how they did it . . . well, I felt that his book could have also been called *The Pathology of Computer Programming*.

Now, I'm a big fan of Weinberg's work on requirements and walk-throughs, and I got a huge kick out of his extraordinarily clever books on consulting and technical leadership. So when the Silver Anniversary edition of *Psychology* recently appeared, I wanted to see if my response to the original edition was precocious or merely immature.

Re-reading the book was a bracing experience: Weinberg's *Psychology* is a classic because he identified an issue that was going to become more important with time — the care and feeding of programmers and programming teams. Even as a teen-age geek with an Imsai and Plato access, I sensed that technological issues were subordinate to human issues.

Then again, it was clear that computers were going to change everything. The challenge was going to be to figure out how: Would software be the product of personal or interpersonal genius? But I never dreamed that the business world Weinberg described would be as immature and irrational as my high school.

Stupid me! Weinberg clearly believed in managing teams more than managing technology. Even more, he believed in managing dysfunctional teams. He understood that managing people's weaknesses and flaws is as important as managing their strengths. Frankly, I was frightened by a book about managing organizational misfits masquerading as a book about systems design. Weinberg's insights simultaneously struck me as wildly clever and stupendously insulting: *If a programmer is indispensable, get rid of him as quickly as possible.*

In his Silver edition, Weinberg notes that he's been thanked countless times for that particular management epiphany. I'm still struck by the number of firms that don't appreciate this kind of design heuristic. But as Weinberg notes, ". . . the lack of software skill was never the problem. Lack of managerial skill was always the problem; lack of software skill was merely a convenient excuse for those managers who lacked esteem."

I'm not a touchy-feely kind of guy, but I recognize that the fundamental truth Weinberg zeroed in on decades ago was that it would be the touchy-feely issues — not new tools, technologies or languages — that would have the biggest impact on the quality of software development. Like Fred Brooks' *Mythical Man-Month*, Weinberg's *Psychology* endures because it recognizes that organizations are prisoners of their pathologies.

What technology offers is a new lens and lever into organizational interactions and innovation. For that reason, I was a bit surprised that Weinberg's update didn't talk about the role of rapid prototyping, joint application development and other methodologies designed to link software development, managerial development and organizational development more creatively. But still, it's astonishing how relevant the book remains.

For me, re-reading *Psychology* was less a trip down memory lane than a reminder of a hard-won lesson: In a time of technological turbulence and digital discontinuity, management leverage often comes from those things that *don't* change — despite our best efforts. □

Schrage is a research associate at the MIT Media Lab and author of No More Teams! *His E-mail address is schrage@media.mit.edu.*

The Net offers utopia, if your IQ is high enough

Michael Medved

Breathless visionaries may hail the utopian power of the Web to unite humanity, but realists should acknowledge a more troubling possibility.

The Internet could exacerbate existing divisions based on intelligence, dangerously separating the population into haves (the Net-connected) and the have-nots (the TV Nation).

No one could claim that the Web is, or ever will be, the exclusive province of superior intellects. Ordinary Americans of ordinary intelligence participate just as avidly as high-IQ geeks with Cal Tech degrees. But what about all those hundreds of millions who are, by definition, below average in raw brainpower? As my horrified 11-year-old daughter declared when she first grasped the concept of average: "But that means that half the people in the whole country are below average!"

What's more, some 43 million Americans possess IQs below 85; at least 7 million below 70. An adult with an IQ of 70 may be an admirable person, but he's unlikely to use the Internet as his main source of entertainment and information. Aside from his difficulty mastering even rudimentary computer skills, there's also the obstacle of interactivity. Most people of severely limited intelligence prefer the passive TV model to the bewildering complexity of the Web.

The National Institutes of Health report that families that connect to the Web see their TV viewing drop by an average of 15% in just 12 months. Most experts conclude that the Net is the chief explanation for the measurable — and unprecedented — decline in nationwide TV viewing during the past three years.

Some broadcast executives understand the threat represented by the Web. Assuming that people of average and above-average intelligence will be increasingly drawn to the exciting and limitless new medium, networks will focus aggressively on people of limited IQ to maintain their faithful audience. ABC seemed to acknowledge that in its controversial advertising campaigns for its 1997 and 1998 seasons. Under the heading "TV Is Good," the network's billboards frankly appealed to unassailable stupidity: "Scientists say we use 10% of our brain. That's way too much."

The defensive tone of this ad campaign suggests an America one day divided between those who manipulate a mouse and those who clutch a remote.

Not long ago, televised entertainment represented one of the few common elements in our culture: Whatever our differences in status and education, we could discuss *I Love Lucy* or *All in the Family*. In the future, many citizens will spend leisure time exploring the Web while many others, of distinctly lesser intellectual ability, remain addicted to TV. Abundant research shows that this addiction causes significant drawbacks, especially for kids — including lowered attention span, reduced reading ability, fearfulness, depression, passivity and chronic obesity.

TV networks focus on people of limited IQ to maintain an audience.

In an information economy, intelligence plays a more prominent role than ever before in determining success or failure — trumping race, gender, economic background and even formal education. The tendency to relax with either the Internet or the boob tube will only intensify the differences already dictated by native ability, making people either more connected or more comatose. While dreaming of the awesome democratizing and unifying potential of the Net, we must recognize its likely contribution to the shaping of two Americas, separate and unequal. □

Film critic Medved, author of Saving Childhood *and* Hollywood vs. America, *hosts a daily three-hour radio talk show heard in 90 markets across the U.S.*

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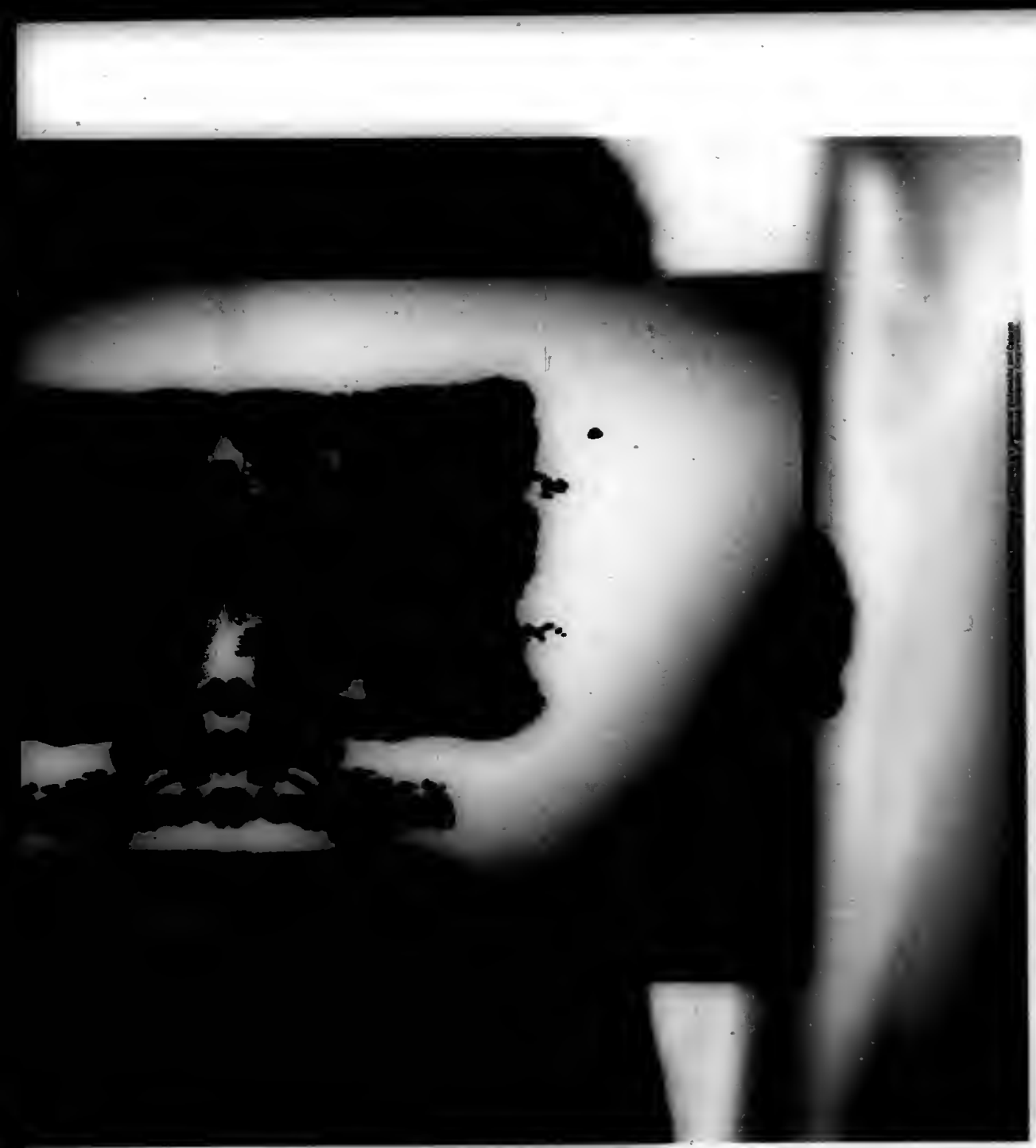

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Destroying old E-mail won't save you

David Moschella

As the political pundits often say, the biggest difference between Watergate and Whitewater was that Nixon put himself on tape.

Without the evidence of his own words, Nixon too could have denied knowing anything and wriggled his way through. Why he didn't turn off the recorder or destroy the tapes remains one of our great psychological mysteries.

As government lawyers mine through years of Microsoft Corp.'s E-mails, technology pundits are now raising similar questions. And it isn't the first time old E-mail has surfaced in court.

It has been suggested that, as a precautionary measure, executives should regularly purge their own E-mail archives, just as they occasionally shred certain paper documents. But, however well-meaning, such thinking is generally misguided. First of all, it mostly won't work. Destroying E-mail is inherently a chasing-your-tail sort of exercise. Among the sender, the recipients, local storage, server storage, backups and printed versions, you will never know if every copy has been removed.

If an E-mail message can't withstand legal scrutiny, don't send it.

Perhaps more tellingly, whether you are talking about love letters, family quarrels or business dilemmas, many people feel an almost irresistible urge to hang onto controversial documents. Thus, the very E-mails you want to be rid of will likely prove the most protected. For instance, if you received a strongly worded message from Bill Gates, how would you know whether it was something you should warily delete or securely save? Would you send an E-mail and ask? And what about *that* E-mail?

Even if you could destroy every copy, large-scale purging probably isn't a very good idea. For most law-abiding businesses, complete E-mail archives will do much more good than harm. Just as companies benefit by keeping accurate human resources records, old E-mails can be extremely useful in defending against charges of discrimination, harassment, contract disputes, collusion and other potential liabilities. Once again, you might destroy your E-mail, but your future adversaries certainly won't.

It's easy to say that legally sensitive matters should be discussed only in private, face-to-face discussions. But there are times when that just isn't feasible. You could, of course, use voice mail, but you can never be sure that voice messages will not be secretly recorded. And there's probably nothing more dangerous than the illusion of conversational privacy. Given all that, when CEOs purge their E-mail files, they risk engaging in, at best, wishful thinking, or, at worst, unilateral disarmament.

Consequently, the only real solution is for executives to always be aware that writing E-mails isn't like having private conversations. This is really pretty basic.

In times past, whether you were talking about business memoranda or the letters of Henry James, everyone recognized that writing was a more thoughtful, deliberative and formal medium than speech. However, in our E-mail-centric industry, some of that important distinction has been blurred, with E-mails now used for both daily conversation and formal memorandum. That, of course, is the heart of the problem: E-mails are not speech; they are memos. Conversations vanish; E-mails do not.

You may not like the idea that any E-mail you have ever sent is probably stored out there somewhere, ready to resurface at anytime. But that's the way it is. If an E-mail can't stand legal scrutiny, don't send it. Who knows? It might even lead to more thoughtful and deliberative business communications and practices. □

Moschella is an author, independent consultant and weekly columnist for Computerworld. His E-mail address is dmoschella@earthlink.net.

The digital-imaging revolution is coming

Don Tapscott

It's true that a picture is worth a thousand words, and today the Internet and digital-imaging technology are letting the power of the photograph reach unprecedented heights.

As Kodak senior vice president Carl Gustin explains in his "Imaging in the Digital Economy" chapter of *Blueprint to the Digital Economy*, the ability to transfer high-quality images over great distances at low cost has enormous implications for business and consumers alike. Consider the often-frustrating task of house-hunting.

Today, potential buyers can log on to *www.realtor.com* and view more than 1.3 million properties for sale across the country. Smart real estate agents attach a photograph to the listing, knowing that makes the information more eye-catching and relevant to the buyer.

It's possible today to accompany those photos with running commentary. Tomorrow, using sophisticated Web applications, specialized companies will offer agents and their potential buyers the option of taking virtual-motion tours of homes. House-hunters will be able to point to any direction in the house — even look out any window — and catch the view. The packages, of course, would include information on or links to maps, community information, pictures of the neighborhood and whatever else the imaginative real estate agent can generate. While there's no substitute for being there, the ability to do an initial search over long distances is invaluable to the early decision process.

The biggest market for Web-based photography lies in family snapshots. More than 75 billion amateur photos were taken last year, almost all of them with conventional film. Despite the number of digital cameras found under this season's Christmas tree, traditional film will prevail for years to come. Digital cameras may be convenient, but they still don't come anywhere near the price/quality combination of regular photos.

But these two technologies can quite happily coexist, and pictures from regular film already enjoy the power of the Net. Commercial services such as PhotoNet let picture-takers upload their photos to the Net at the same time film is being developed, so proud parents can easily E-mail photos of their newborn to faraway family and friends.

People are accustomed to getting photographic products and services when and where they want them. Whether they're at the Statue of Liberty, Taj Mahal or Eiffel Tower, people know they'll be able to buy a fresh roll of film. The digital age of photography won't do away with the demand for opportunistic photographic services, but it will change the offerings. Perhaps consumers will rent digital cameras, then have the prints delivered to their hotel room or E-mailed to the destination of their choice. Today's film kiosk will soon evolve into a digital-imaging enabling station with all the computer and communications power to deliver the right results.

Pictures from regular film already are enjoying the power of the Net.

As computing power grows, the possibilities are endless. Perhaps digital cameras will be Global Positioning System-enabled, so that every photograph will contain information on the precise position where it was taken. You could then ask your computer's photographic "shoe box" to retrieve every photo taken six years ago within two miles of a cottage. □

Tapscott is chairman of the Alliance for Converging Technologies, a think tank investigating how the Net changes business strategy. Blueprint to the Digital Economy (McGraw-Hill, 1998) was written by alliance members.

LETTERS

The network computer: more than a 'legacy'?

REGARDING Maryfran Johnson's opinion column on the network computer ["A worthy legacy," CW, Oct. 26], she and I must live in different universes. The idea behind a network computer is to have what amounts to a graphics computing device with no local permanent storage — just enough smarts to access the network — with the rest being server-supplied.

There is no PC, no matter how cheap the hardware, that can compete on a total cost basis with a true network computer. The larger the enterprise, the more this is true. This is why the enterprise sales are taking time — the payoff is in doing it right, and for big users, this takes planning. I predict that in 1999 and 2000, we will see explosive growth in network computing.

Stanley Kritzik, partner
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WHEN I FIRST read about the network computer, I thought it was a terrible idea, an attempt by the mainframe crowd to regain dictatorial control of all computing assets and agenda.

I wondered how the users of the network computer would fare, downloading all applications and files using limited-bandwidth connections, and just how they'd scream when their reports were missing because a server was down and they had no opportunity to save their work locally.

You think the network computer is surviving in the form of desktops accessing intranet-based applications. What you describe as intranets are really just good old client/server technology with a new front end.

The buzzword and concept of the network computer is indeed dead.

Gerald L. Geisel
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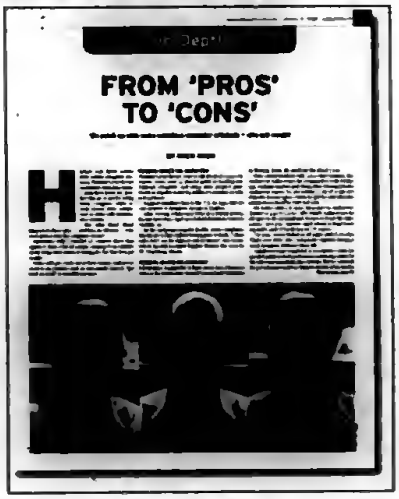
Hackers: Getting to the heart of the matter

I JUST READ the article "From 'Pros' To 'Cons' " [CW, Oct. 19]. Finally a reporter had the foresight to interview actual hackers. *Computerworld* has taken the next step in reporting computer security-related stories.



I, like many others, was getting bored reading about hackers who broke in to this or that company to steal documents or write their slogan on a company's Web site. One thing that I feel was missing from the article was Lamprecht's or Martin's perspective on hacking in the late '90s. Do they feel it's more advanced? A bigger problem? Is the antihacker technology catching up? What are their opinions on how to stop hacking? This is such an explosive topic. There are so many what-ifs to network security that it is only a matter of time before a hacker really causes havoc that affects millions of people.

Allen Reitz
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WHAT HAPPENS to computer criminals in jail?

I say free them all, quit prosecuting them and give them jobs doing what they do best.

If our own kids can do this to the American government and companies, then what can a foreign government do to us?

We should turn our hackers on the hackers in countries that are not friendly with the U.S., or ask them to expose our weaknesses so that we may fix them.

Hackers do an excellent service to business and government.

And no, I'm not a hacker.

William Cox
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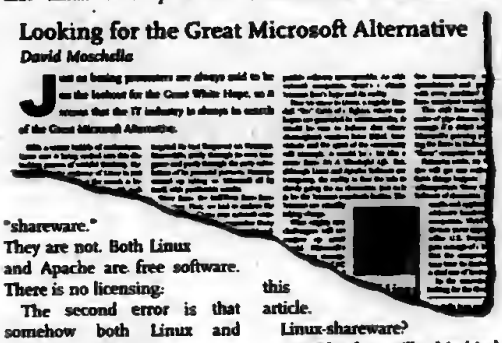
Moschella got lost looking for Microsoft alternative

I FIND IT interesting that technology writer David Moschella could work two errors into one sentence.

In "Looking for the Great Microsoft Alternative," [CW, Oct. 19] he says, "But, although Linux and Apache Software are intriguing, the reality is that the tide is slowly going out on shareware. . . ."

The first error is implying that Linux and Apache are "shareware."


Looking for the Great Microsoft Alternative
David Moschella

They are not. Both Linux and Apache are free software. There is no licensing.

The second error is that somehow both Linux and Apache are floundering.

They are not. Apache is still the No. 1 Web server, with more installations than all the other Web servers combined.

And Linux's rate of growth is faster than any other operating system and has been for five years.

I'm not saying Linux will beat Microsoft Windows NT.

I'm just saying the facts refute his claims.

Anthony Taylor
Sitka, Alaska
tony@stikheen@alaska.ihs.gov

I WOULD LIKE to complain about the inaccurate story by David Moschella titled "Looking for the Great Microsoft Alternative."

It is obvious that Moschella has done little or no research for this article.

Linux-shareware?

Any idea how silly this kind of rubbish makes you guys look?

All in all, a misleading and uninformed article. Opinions are worthless when not backed by facts.

Allan Willis
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Australia
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Can anyone really take control of the Linux operating system?

I AGREE with Paul Gillin about the pros and cons of Linux at this stage of its development ["Linux gets real," CW, Oct. 5].

What corporations (and third-party independent software vendors) really want is a trustworthy and consistent application programming interface structure. An independent, not-for-profit, vendor-staffed, Linux "trustee" organization would provide a version-control platform without interfering with the open-source development dynamic. This group could be staffed with developers on sabbatical from Linux independent software vendors. Because their compensation would come from their employers or through salary or options, they would maintain their economic incentive to improve the operating system. But the staff would come from multiple vendors, so no one vendor's Linux "vision" would necessarily dominate.

This "trustee" structure would give businesses and software vendors the confidence to make the investments that would give Linux critical mass as a viable commercial operating platform.

Barry Randall
Advantus Capital Management
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NICE ARTICLE, but a few factual corrections are in order. Vendors can't take Linux proprietary.

The Linux kernel and the majority of the software that make up the Linux system have been released under the terms of the GNU Public License.

Attempting to take it proprietary would violate the terms of that license.

The tools contributed by the Free Software Foundation are by definition safe from being taken proprietary since the FSF owns the copyright on them.

As for the arduous standards bit, I and most others in the Linux industry have rejected attempts to put Linux through a traditional "standards process."

Given the nature of the Linux programmer community, each of whom owns copyright on his own piece of the code, it is unlikely that many would cooperate with a standard that they felt was being imposed on them by outsiders.

Eric Lee Green
Linux Hardware Solutions
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Keep up the good work with QuickStudy

I JUST WANTED to let you know how much I like QuickStudy. I yank them out of the paper and put them in a file for reference. I really liked the one on enterprise resource planning (ERP) — a nice view of everything about ERP on one page.

Keep up the great job.

Gary Henkel
Time Customer Service
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gary.henkel@mag.com

I REALLY LIKE the QuickStudy series and find it useful. There are so many buzzwords and technologies that just suddenly appear, and I scramble to find out more about them. It's the main reason I paid for another subscription to *Computerworld*.

Mark Giffin
Pasadena, Calif.
mgiffin@earthlink.net

I'D JUST LIKE to let you know that I love [QuickStudy]. This is a great service and sure makes it easy for me to keep my head above water in this era of constant change and information deluge.

Keep up the good work.

Cherisa Burk
Federal Reserve Bank of New York
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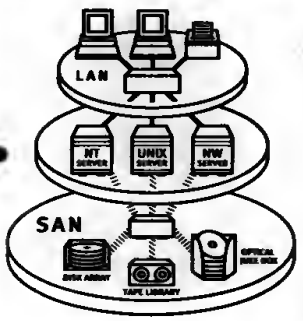

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Dan Bond, Data Warehouse Manager, Paradyne Corporation

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Teaching Windows 2K

CBT Systems Inc. in Redwood City, Calif., is shipping courseware for beta users of Microsoft Corp.'s Windows 2000 and users of Microsoft's SQL Server 7.0. The Windows 2000 curriculum consists of 16 hours of courses that cover architecture, installation, configuration, migration and interoperability. The 28 hours of courseware for SQL Server 7.0 includes modules on replication and data management, installation and configuration, and data warehousing. Each course costs $395. Site enterprise licensing is available.

Bankers' Y2K guide

The American Bankers Association in Washington has introduced two interactive manuals for year 2000 project management and contingency planning. The project management manual contains checklists, legal reviews and sample letters necessary for successful year 2000 audits and examinations. The contingency planning manual covers topics such as impacts, interruptions and best practices for testing and documenting results.

The project management manual is available for $249 for association members and $349 for nonmembers. The contingency planning manual costs $299 for members and $399 for nonmembers. For more information, call the group at (800) 338-0626.

Sears slices IT turnover to 9%

▸ New HR group improves pay, training

By Barb Cole-Gomolski
HOFFMAN ESTATES, ILL.

A YEAR AFTER dedicating a group of human resources professionals solely to information technology, Sears, Roebuck and Co. is sold on the idea.

CAREER TRACKS

Turnover among its IT staff of 1,500 is down from about 13% last year to less than 9% today, and the company has developed a set of initiatives that it expects to further improve retention, according to Gael Hanauer, senior director of human resources for information systems.

The measures could help the retailer ride out a transition period in IT. Sears' senior vice president and CIO, Joseph Smialowski, last week announced plans to take the top IT post at BankBoston Corp.

The idea of establishing a human resources group devoted to IT isn't new. Analysts pointed out that the practice was commonplace during the 1980s but was halted at many companies during the era of downsizing. In the past year, the setup has been again touted by consultants as a way to improve recruiting and retention during the current IT labor drought [CW, June 29]. It has been adopted by some large IT sites.

At United Health Care Corp. in Hartford, Conn., a dedicated human resources team for IT helped the company reduce open IT jobs from about 12% of IT head count to less than 1%. Kraft Foods Inc., which boasts an impressively low IT turnover rate of just 5%, also has a human resources practice solely aimed at IT [CW, Nov. 2].

For Sears, it was last year's double-digit turnover, tight labor market and mediocre feedback on an employee satisfaction survey that spurred the company to act, Hanauer said.

What follows are some of the results of Sears' initiative:

Sears, page 40

MARC SIMARD

Sam's Club kiosks help insurer sell

By Cynthia Bournellis

THE LENGTHY, manual processes insurance companies have long used to sell policies and process claims are becoming outdated and can result in lost business or additional costs to customers, according to one insurer.

So Insurance Holdings of America LLC (IHA), a franchiser of insurance and brokerage services, found a way to automate some of those processes and try to reach a broader market.

IHA is selling franchises that are set up inside Sam's Club food warehouses. Each one is a sales booth equipped with a server, PC, hub and router. Staffed by a salesperson connected to IHA databases, it lets shoppers buy insurance on the spot and salespeople efficiently process orders.

The current project involves 24 Sam's Clubs in Illinois. Jim Barry, CIO at Beverly, Mass.-based IHA, said the company plans to have 2,000 booths in operation in 550 Sam's Clubs by April, in hopes of reaching Sam's 33 million members.

Barry said the new model can almost eliminate transaction costs — which used to equal as much as 10% of a premium —

Sam's Club, page 40

Betas clean code, but users want more input

By Gary H. Anthes

USERS WILLING to beta-test new software say there are benefits to being early adopters, but they also say the process has gotten out of control.

"Beta cycles are tremendously long now — you have prebeta, beta, postbeta, postbeta II and so on," said John Swanteck, director of client/server administration at First Union Corp. in Charlotte, N.C. "But there's a benefit to that — I think we get less bugs."

Certainly the greater the number of users who participate in a beta test, the more efficient the bug-removal, according to software-quality expert Capers Jones, chairman of Software Productivity Research Inc. in Burlington, Mass. The percentage of bugs fixed before a product's final release can exceed 85% when there are more than 1,000 beta-test participants, but it falls to between 35% and 50% when there are fewer than a dozen beta testers, he said.

But some users see beta testing as more of a liability than an asset. "We don't do it," said Rod Calacci, an information systems manager at Sundstrand Aerospace Corp. in Rockford, Ill. "We don't want to be first on

Betas, page 40

Why is commercial software buggy?

Vendors are under competitive pressure to get software out quickly	63%
Software is too complicated	12%
Beta tests aren't long enough or don't involve enough testers	9%
Vendors see bugs as a way to get users to upgrade to the next release	6%
Vendors don't want to spend the money to do a better job	4%
Other/Don't know	6%

Base: 202 IT professionals

Source: Computerworld survey

Snapshot

Rules of thumb for corporate policies:

1. Keep them short and simple
2. Every time you establish a new policy, get rid of two old ones
3. Make sure that policies serve employees and customers, not just the organization
4. Beware of establishing policies in reaction to a single incident — the problem may never come up again
5. No matter the size of the organization, no single policy should take up more than a page

Source: *1,001 Ways to Energize Employees* by Bob Nelson

Sam's Club kiosks

CONTINUED FROM PAGE 39

and increase productivity because the transactions are virtually instantaneous.

IHA benefits, too, through increased business; it has already processed 3 million records under the new model, selling close to $1 million in premiums. Previously, insurance agents had to visit customers or sell over the telephone.

Here's how the logistics work: A franchisee buys from IHA a booth and the right to run it inside a Sam's Club for $28,000 (after December, a franchise will cost $38,000). Then the start-up uses software called GroupAdvantage — which is connected to databases at IHA and its partners so that the franchisee can do credit reports and check motor vehicle records — to learn how to quote rates and underwrite policies.

Franchisees give presentations to Sam's Club members via a Web browser interface. Once orders are taken, the data is sent over a T1 line that connects to a frame-relay pipe at Sprint Corp. From there, data travels over IHA's Gigabit Ethernet line to IHA's server farms at its call center in Orinsky, N.Y. Average processing time takes about four minutes, compared with 20 minutes when done by phone, Barry said.

IHA pays Sam's Club $594 to $2,000 per month for space for each booth. Network connections from IHA to Sam's Club are based on Sprint's published tariffs. "That's not bad, considering we make that up in revenue in one day," Barry said. Franchisees pay computer connection fees to IHA.

Although IHA's use of technology to sell insurance isn't unique, its booth approach might be, said Bob Goodwin, senior vice president at Killen & Associates, an analyst firm in Palo Alto, Calif. Giving franchisees a competitive advantage over other insurers selling by more conventional means "also allows consumers to buy on relative impulse," he said.

It's too soon to tell if the model will be successful over time. Jason Ream, an analyst at G2R Inc. in Mountain View, Calif., said that though he believes it will be profitable in the short term, IHA needs to offer interactive financial services to make it in the long run.

IHA didn't say whether it would eventually sell banking services. But it will, over the next two years, invest $10 million in its Gigabit Ethernet network, which ultimately will provide franchisees at the booths with videoconferencing for claims and other services. The network is based on software and hardware from 3Com Corp.

Sam's Club is IHA's first retail customer — landed, Barry said, by a persistent telemarketer. IHA plans to expand its model and is in talks with The Boeing Co. to install booths at Boeing facilities. □

Sears

CONTINUED FROM PAGE 39

- Through more effective recruiting and better retention, Sears has significantly reduced the number of IT consultants it uses. IT head count is about 84% staff and 16% contractors. Five years ago, consultants made up about 40% of IT.
- Using the money it saved on consultants, IT staffers received their first market adjustment raise in three years, which put Sears on par with other employers in the area.
- Six contract IT recruiters have been replaced with three internal recruiters who have hired more than 480 people in the past year.
- Through surveys and focus groups, the human resources people learned that many IT staffers weren't up to speed in the skills they needed to do their jobs. As a result, the company is implementing a career management team to help shore up those skills. As part of that plan, project managers will get training in some nontraditional areas, such as negotiating. In addition, the IT department now has access to about 800 Web-based training courses.

David Dell, research director at The Concours Group in Kingwood, Texas, said, "IT departments that make a point in getting active in controlling their human resources destiny have a tremendous advantage over those that don't." It isn't necessary to set up a specialized branch of human resources for IT, Dell said. However, it is critical that IT partner with human resources on key issues, such as skills requirements, recruitment, employee development and retention. "We advocate IT taking responsibility for HR, but they don't have to take control of HR," he said.

The impact of the move at Sears surprised most of the people involved. "We are redefining career paths," Smialowski said. It's no longer necessary for IT staffers to move out of technical jobs to move up the corporate ladder, he said. "A project manager can advance to the same level as a vice president and still be working in project management," Smialowski said. This ensures that people aren't forced to give up what they love to do — and do best — in order to move ahead in the company. "It also means that there are no dead-end career paths in IT," he said. □

Beta tests

CONTINUED FROM PAGE 39

the street with anything."

"We do beta testing to get a leg up on what's coming," said Steve Brooks, information systems vice president at The Walt Disney Co. in Burbank, Calif. "We're a great proving ground because we have a mix of things. If there's a bug in a product, a company like Disney is going to find it."

Brooks said vendors are moving away from the concept in which beta versions are given to a few carefully chosen and monitored users. "To a large extent, it's a marketing gimmick to get people to feel like they are using something new," he said. "And they are cautious about ever calling anything a 'general release,' because if you are using a 'beta' version you are less likely to complain about it."

Brooks said vendors don't actively solicit feedback on beta products, and users have little incentive to report the bugs they find. "They think, 'Hey, if I do respond, it will be just one of 4 million messages.' "

Three years ago, Autodesk Inc. greatly expanded its beta-test program in an attempt to improve the reliability, usability and supportability of its products, said Matthew Kell, support programs manager at Autodesk. Although the company now has a whopping 20,000 beta accounts for its flagship AutoCAD software, the beta program isn't a marketing gimmick, Kell said.

"It's a very structured program," Kell said. "We have a team of people managing the beta sites, and regular E-mail reports must be submitted by each site." Some users even have monitoring software installed on their systems so Autodesk can track how they are using its products.

Symantec Corp. has from five to 20 corporate testers for every new product and one Symantec quality assurance specialist for every five testers. The company is expanding its beta program into Germany and Japan, said Dana Siebert, an executive vice president at Symantec.

Beta is the second letter of the Greek alphabet. Its use by software developers derives from hardware testing, which includes alpha, beta and gamma stages. For software, only beta testing remains to indicate external tests involving customers.
— Capers Jones, Software Productivity Research

"We find the quality standards in German and Japanese companies are higher than in the average U.S. corporation," Siebert said.

Finding good, conscientious beta testers can be difficult, Siebert added. "In today's environment, IS managers are under a lot of stress, and getting them to commit to working with us is not always easy."

At least one beta tester agreed. "We're probably a pretty crummy beta site," First Union's Swanteck said. "We are terrible about getting back to vendors with regular messages." □

SHORT

Windows banking

Ohio Savings Bank, a bank with $5.5 billion in assets and 45 branches in Ohio and Florida, has installed Microsoft Corp.'s Windows Distributed InterNet Architecture for Financial Services framework.

The architecture, which Microsoft introduced last December, was designed to enable bank software applications to exchange data across disparate computing platforms.

The Cleveland-based bank expects to use the architecture to provide bank employees and customers immediate access to customer information from different channels, including its call centers and automated teller machine network.

Powell urges IT pros to serve their communities

By Johanna Ambrosio
ORLANDO, FLA.

COLIN L. POWELL, the former chairman of the Joint Chiefs of Staff, addressed a standing-room crowd at a high-tech conference here last week, exhorting them to get involved with community service.

Addressing attendees at TechLearn '98, a conference for trainers and training managers, Powell urged the 1,800-plus people in the audience to donate goods and services, volunteer or give their employees time off so they can donate their time to similar efforts. "I need all of you to get involved," Powell said. "Not just the big companies, but the small ones, too."

GOAL: HELP 15 MILLION

Since April 1997, Powell has served as chairman of America's Promise: The Alliance for Youth. The group's goal is to help about 15 million at-risk children in the U.S. by providing safe havens, education, medical care, job skills and training.

Companies that support the group — including information technology vendors Sun Microsystems Inc., Intel Corp., America Online Inc. and Microsoft Corp. — help provide computers and the volunteers needed to help "give these children the skills they need to succeed in the 21st century," Powell said.

Powell also said trainers must "never forget that as sophisticated as we get with technology, learning is fundamentally a human process. A human must motivate the person to want to learn and to, in return, pass that knowledge along to someone else." □

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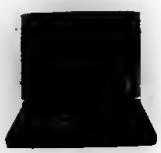

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Briefs

Attention, online merchants:

Offering personalized user services at your Web site – such as a custom home page for each user – can boost the number of new customers by 47% and overall sales by 52% in the first year.

Base: Interviews with 24 online merchants

Source: Jupiter Communications Inc., New York

AOL adds to chat

America Online Inc.'s next version of its ICQ real-time chat software will include a search engine, free E-mail, links to several Internet portals, a scheduling service and other productivity features, company officials said. It's due in a few weeks.

Web/EDI service

Electronic Data Systems Corp. in Plano, Texas, announced an interactive electronic data interchange (EDI) and financial EDI service that lets customers and suppliers exchange trading and payment information over the Internet. The service will enable Xerox Corp. customers to use the Web to quickly process payments, plus integrate payment data into their accounts payable systems.

Barbie buddies

Mattel Inc. is offering custom-ordered "friend of Barbie" dolls at www.barbie.com. Visitors can customize hair color and style, eye color, outfit, accessories, name and personality characteristics for the doll, which costs $39.95.

Extranet cuts purchase costs

By Carol Sliwa

A COMPANY that employs more than 35,000 people, owns more than 200 businesses and spends $1.6 billion annually should be able to negotiate good deals for the supplies and services it needs.

But The Thomson Corp., a Toronto-based company with corporate headquarters in Stamford, Conn., is extremely decentralized. The publishing giant's far-flung worldwide business units have their own profit-and-loss centers and share information infrequently. Multiple contracts with the same supplier are common.

PURCHASING MANAGEMENT

"There's a complete lack of leverage," said Karen Fedele, a director of global contracts at the company.

That's finally starting to change, thanks to the work of the eight-person Thomson Optimized Purchasing Services (TOPS) team. The team helped launch an extranet site a year ago to provide Thomson-owned companies contract summaries, pricing data, news information about suppliers, a discussion forum and a purchasing contacts directory.

Before the extranet, the group had been sending out thick binders of information, but companies often weren't inserting the quarterly updates. The extranet, which currently has 1,200 registered users, ensures that they have access to up-to-date, consistent information around-the-clock.

The TOPS team, which employed Thomson's internal consulting company to create the site, initially considered Lotus Development Corp.'s Notes clients for sharing information. But at the suggestion of European business units, the group opted for Web browsers, recognizing that Thomson companies don't share a common software infrastructure.

Users need a password to enter the Domino server-powered

Extranet, page 48

THE THOMSON CORP.

U.S. headquarters: Stamford, Conn.

Revenue: $6 billion (approximately)

Number of employees: More than 35,000

Companies owned: More than 200

Chairman: Kenneth R. Thomson (whose net worth is estimated by *Forbes* magazine at $14.4 billion)

Core market centers: Legal and regulatory; financial services; educational publishing; health care information; scientific and business reference; North American newspapers

Thomson brands/businesses include:

- West Group (includes Westlaw)
- First Call Corp.
- *Physicians' Desk Reference*
- Jane's Information Group (U.K.)
- Peterson's Guides
- *The Globe and Mail* (Toronto newspaper)

Schwab wants users to stay a while

▸ *Excite deal brings portal-like presence to site*

By Sharon Machlis

AFTER GRABBING the market lead in online stock trading, Charles Schwab & Co. is moving to offer its users sports, weather and other news so they will stay at Schwab.com after finishing up with their finances.

"It's one of those 'sticky' experiences" that Internet site executives are looking for, said Martha Deevy, senior vice president of electronic brokerage at Schwab. "This will allow [users] to still have access to things they previously would have left Schwab.com to do." The move is part of a technology and content partnership with Internet portal Excite Inc. in Redwood City, Calif., and Intuit Inc., the Mountain View, Calif., publisher of Quicken financial software. The companies will jointly create investment education content on Excite's Money and Investing channel starting next month.

Under the deal, Schwab will provide investment information to the channel in return for access to potential customers and Excite's customization capabilities.

Schwab account holders will be able to personalize the opening pages that greet them at the Schwab site with options such as local sports scores, financial news and stock tracking.

"It really signals the next stage of their approach to the Web," said Paul Johnson, an analyst at Framingham, Mass.-based International Data Corp., a sister company to *Computerworld*. "It allows them to offer some portal-like capabilities."

Although Schwab has a million online accounts with $131 billion in assets, the overwhelming majority are existing Schwab customers who have

Schwab, page 48

Easy-to-navigate intranet tool makes sharing data a breeze

PRODUCT REVIEW

▸ *File management is lone shortcoming*

By Howard Millman

WHEN YOU WANT to share information on an intranet, you want Trellix 2.0. A one-trick pony, this highly automated program unburdens staff from having to update the intranet's content.

Trellix requires little in the way of technical skills and enables just about every computer user to create, hyperlink and publish multipage HTML documents without any knowledge of HTML, the Web programming language. Its only drawback is that it doesn't offer even elementary file management features, such as delete, move and rename. I'd like to see Trellix Corp. add those in a future release.

Although Trellix's primary purpose is to automate the updating of intranets and Web sites, it also E-mails files to remote locations. E-mail recipients need the free Trellix viewer, available on the Trellix Web site's support section, to view the content.

You can create your own documents in Trellix: Its word processor has a Microsoft Word-

Intranet tool, page 48

▸ *Trellix 2.0*

OVERALL GRADE B+

TRELLIX CORP.
Waltham, Mass.
(781) 788-9400
www.trellix.com

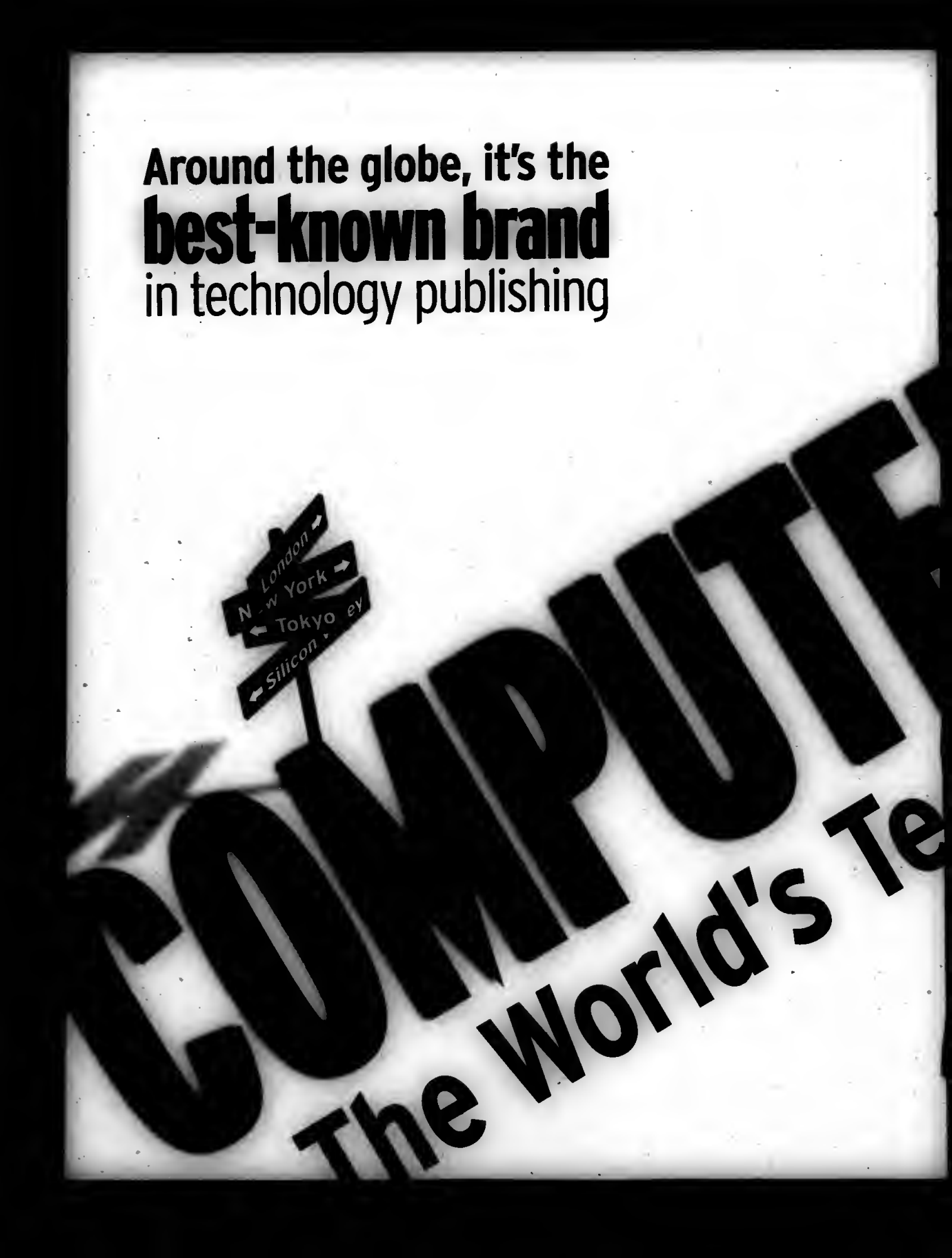
Price: $249

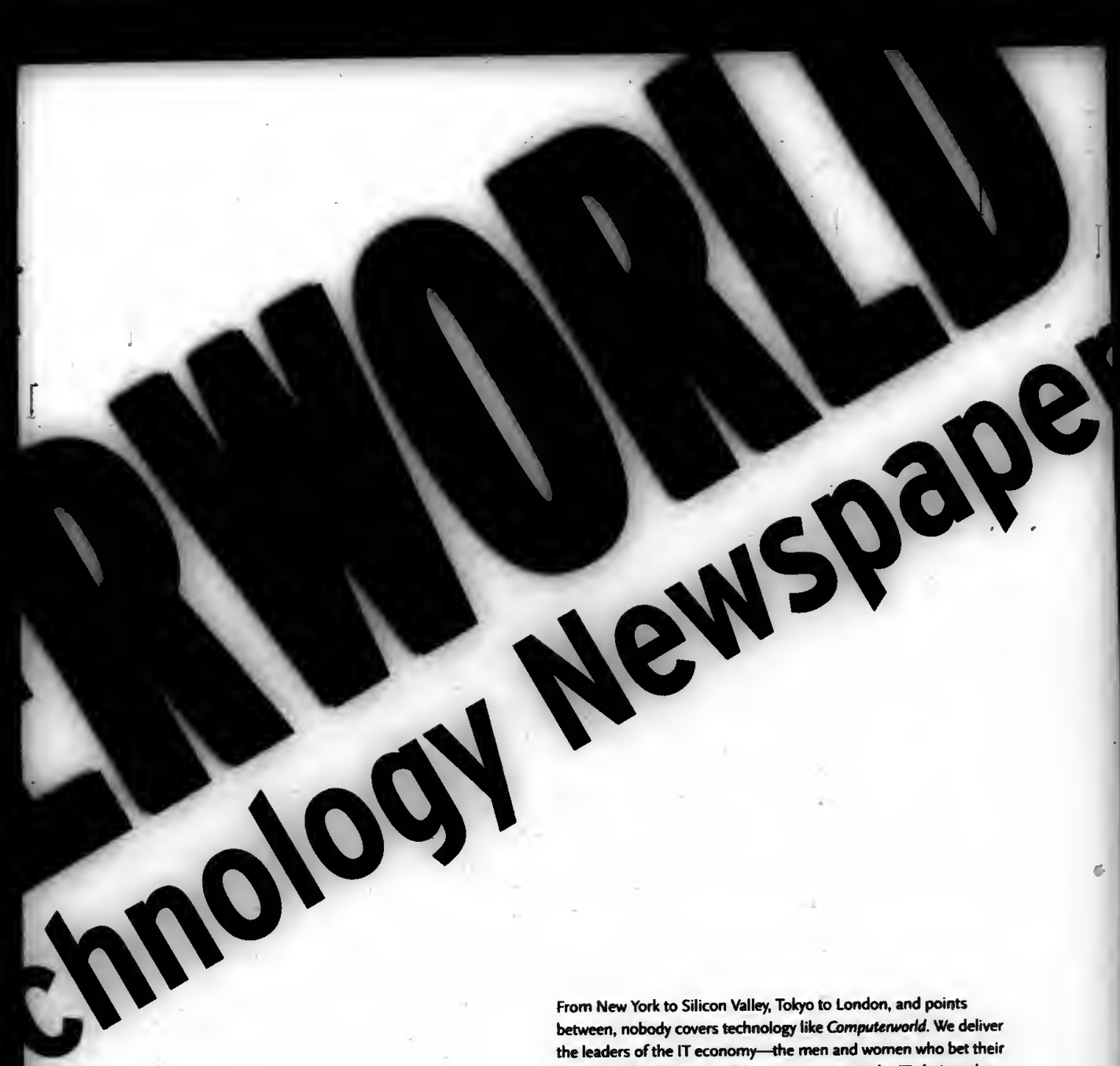
Summary: A simple-to-use, single-purpose utility that creates or imports documents and automatically converts them for use on an intranet or Web site.

Pros: Fully automatic; extremely easy to use; no HTML coding required.

Cons: Lacks even rudimentary file management.

Around the globe, it's the
best-known brand
in technology publishing





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Awards from: Academy of Web Design, American Society of Business Press Editors (ASBPE), Computer Press Awards (CPA), Folio., Public Relations Society of America (PRSA), Editor & Publisher Magazine, and the Western Publications Association Press mentions. Lexis-Nexis (Forbes, Business Week, Fortune, NY Times, Wall St. Journal) 9/1/96 to 9/1/98.

OpenPGP protocol gets official push

By Elizabeth Heichler
LAS VEGAS

THE IPSNPGP security protocol has reached a milestone: It's been promoted to the status of proposed standard by the Internet Engineering Task Force (IETF), the IETF announced here at the Comdex/Fall '98 show last week.

Although the Pretty Good Privacy (PGP) encryption protocol for Internet security is well-known throughout the world and technical differences between implementations are fairly small, there has been the perception that with no formal statement defining it, there's uncertainty about whether various implementations are really interoperable, said John Noerenberg, chairman of the IETF's PGP working group.

OpenPGP is the open standards version of Santa Clara, Calif.-based Network Associates Inc.'s proprietary PGP protocol.

By turning over OpenPGP to the IETF, Network Associates will let anyone in the world create PGP-enabled products.

OpenPGP has now reached the second stage in the IETF's four-step standards process, with the next level being draft standard.

IETF rules call for a wait of st least six months before a proposed standard becomes s draft, during which it can be demonstrated that there are several implementations running and that they are interoperable, Noerenberg said.

Because PGP has been around for nearly eight years and there are a good number of implementations, Noerenberg said he expects that PGP will attain draft standard status fairly quickly. □

Heichler writes for the IDG News Service in Boston.

Extranet

CONTINUED FROM PAGE 45

site and another password to access the sensitive contract information stored in the Notes database.

The site cost $150,000 to build, $1,000 per month to maintain and $1,000 per month for hosting services, Fedele said. But so far, the TOPS program has helped Thomson save $60 million, she said.

Since March 1995, the TOPS team has negotiated more than 100 contracts. Despite not being able to guarantee any volume commitments, the team managed to reduce costs in contracts by 13%, on average, said Ray Mazzoleni, a TOPS contract manager.

"We don't know what we're spending. We're not in a position to make a commitment," Fedele said.

But the TOPS team can help suppliers sell into Thomson companies — many of which aren't easily identifiable because they don't bear the Thomson name — snd help reduce their costs to do so. And those cost savings can be passed on to Thomson companies.

"Even if there's not s guaranteed dollar amount, it's still worthwhile because of the competitive situation. If Supplier X doesn't, Supplier Y will be eager to do it," said Erica Rugullies, an analyst at Giga Information Group in Cambridge, Mass.

The TOPS team doesn't function as s centralized purchasing service, and none of the Thomson companies is required to participate in the program. But

in the case of travel services, 96% have chosen to participate in the TOPS contract with American Express Co.'s travel group.

Technology products' have been another area of success. Before the TOPS agreement, Thomson companies purchased $400,000 worth of software through one reseller. After the deal, that reseller's business with Thomson shot to $7 million. Both sides benefited.

"But we knew the agreements were of no value if people didn't know about them," Fedele said. Thus, the extranet. □

Schwab site wants users to stay a while

CONTINUED FROM PAGE 45

converted to Internet accounts, Johnson said. Meanwhile, firms such as ETrade Group Inc. and Ameritrade Inc. have been snaring a big chunk of the new business. Schwab can now pitch its services tn many nf the 16 million people who visit Excite at least once per month.

"ETrade has been the frontrunner" in promoting its additional financial content, but other electronic brokers are eager to add to and promote their news, analysis and tools, said Patrick Keane, an analyst at Jupiter Communications Inc. in New York. In fact, several electronic-commerce sites have been boosting content. General Nutrition Centers, s chain of health and nutrition stores, is adding a health information section. And brokerages are partnering with sports sites, as ETrade has done by providing stock quotes and portfolio tracking on CBS SportsLine.

But Schwab may be off-base in betting that sports will attract new investors, Keane said. "It's almost a demographic mirror, in terms nf the kinds of people going to [sports and finance] sites," he said.

Schwab wouldn't discuss the terms of the partnership, although it's believed that it is paying a substantial sum to Excite for its information services. The Financial Education channel should debut on Excite next month, with Schwab's customized pages due in next year's first quarter. □

Virtual trade-show firm makes debut at Comdex

By Jeanette Borzo
LAS VEGAS

"WE THINK TRADE shows are great, but somewhere down the line, people have to question the cost justification," said Harry Tsao, vice president of marketing at ShowExpo.com Inc. "A lot of top management people are saying, 'Are trade shows worth it?' "

Tsao has s vested interest in that point of view. ShowExpo.com chose the largest trade show in the U.S. to launch its new product: s virtual, Web-based trade show. Information technology buyers can attend s ShowExpo trade show for free, while IT vendors pay to have their products and corporate information hosted on the site. By helping IT buyers trim their travel costs, ShowExpo hopes vendors may expand their appeal beyond the usual convention crowd.

But whether s visit to Comdex/Fall '98 is worth the effort is a question IT vendors and users must answer themselves.

"The problem is that the show takes a month of s company's time away from a real focus on customers," said Comdex veteran Andy Marken, president of Marken Communications Inc., an IT public relations firm in Santa Clara, Calif.

Others said that, although the purely informational value of a show such as Comdex has changed over the years, the human aspect continues to make attendance important.

"More people have been doing what we are doing — like Dell, Compaq and IBM — and meeting one-one-one," said Michael Cowpland, Corel Corp. CEO and president. "People can find out about products through the press or on the Web, and instead are coming to the show to meet with companies that they are interested in."

Tsao acknowledged that the human element of conventional trade shows is an advantage that they may continue to have over his company's lower-cost alternative. To make up for the lack of human trade show back-slapping and handshaking, ShowExpo will add chat capability to its site so that users can discuss vendors — or other topics — among themselves.

"You can bump into people here, too," Tsao said. □

Borzo writes for the IDG News Service. Cheri Paquet and Nancy Weil contributed to this report.

REVIEW ▶ *Trellis 2.0*

Intranet tool

CONTINUED FROM PAGE 45

like interface, or you can import documenta created in Word itself. During the import, users can specify how Trellix should divide the page — at page or section breaks, at parsgraph marks or by a user-specified style. You can also import the document with no breaks.

Features new to Version 2.n include HTML tables and OLE.

You can now create multicell tables in Trellix, automatically convert the tables to HTML and export them. Advanced users can facilitate real-time updates by linking the text or images in the tables directly to external data sources.

Real-time updates also can be done by launching OLE-compliant applications, which include most Windows applications.

Improved mapping support lets you drag s file or uniform resource locator (URL) and drop it onto the Trellix site map, automatically creating s page and links to the file or URL.

You can rearrange pages quickly by dragging and dropping them. Trellix takes care of renumbering the pages and updating their hyperlinks, s welcome time-saver. Likewise, you can freely move the content from page to page without worrying about breaking the hyperlinks.

I liked Trellix's use of s dual-paned design window. The lower pane displays the document you're editing. The upper pane displays your location in your document.

The upper pane's map area uses small boxes to indicate the relative position of the page you're viewing in the document. You can see exactly how many pages you have, know where you are in the document or jump to a different page by clicking on the sppropriate box.

Trellix automatically adds navigation buttons to help readers browse easily.

Trellix is easy to learn and navigate. An animated tour gets you started fast, and wizards guide you through creating or importing documents. Trellix ships with s selection of templates to give your intranet pages s sophisticated look, but I would like to see more and livelier templates. □

Millman operates Data System Service Group LLC, a consultancy in Croton, N.Y. His Internet address is hmillman@ibm.net.

Post, Newsweek offer comparison-shopping

▸ *Interactive Web venture builds a virtual shopping mall*

By Kathleen Ohlson

THE WASHINGTON POST and *Newsweek* have become the latest media veterans to target the online shopping market.

The pair — both owned by the Washington Post Co. in Washington — have kicked off a joint new-media venture, Washingtonpost.Newsweek Interactive, that includes a comparative shopping tool from the publications' Web sites, said Erin Starzynski, a spokeswoman for the venture.

The shopping tool, called MarketPlace, lets visitors search for the lowest price for an item. They also can search by product brand name and merchant, Starzynski said.

MarketPlace contains classifieds, auctions, a business directory and 10 shopping categories, including books, computer products, toys, fashion accessories, videos and gifts, she said.

The tool was created by Sunnyvale, Calif.-based Junglee, now owned by Seattle-based Amazon.com Inc., which is one of the major vendors participating in MarketPlace.

Eddie Bauer Inc., Gap Inc., Nike Inc., EToys Inc. and Washington-based retailers such as Kingbooks also are among those participating in MarketPlace.

Contextual links, which are ads placed next to related editorial material, will be spread throughout the MarketPlace site and included in the editorial site where appropriate, Starzynski said.

Links will appear in the book-review section, where a visitor can click and comparison-shop, said Paul Pappajohn, vice president of development and electronic commerce at Washingtonpost.Newsweek Interactive.

"We believe it's an added benefit to the reader, [but] we're not endorsing" any specific product, Pappajohn said.

The idea behind the links is to provide a level playing field for small and large retailers, he said. The site also wants to appeal to local Washington retailers that are online, he said.

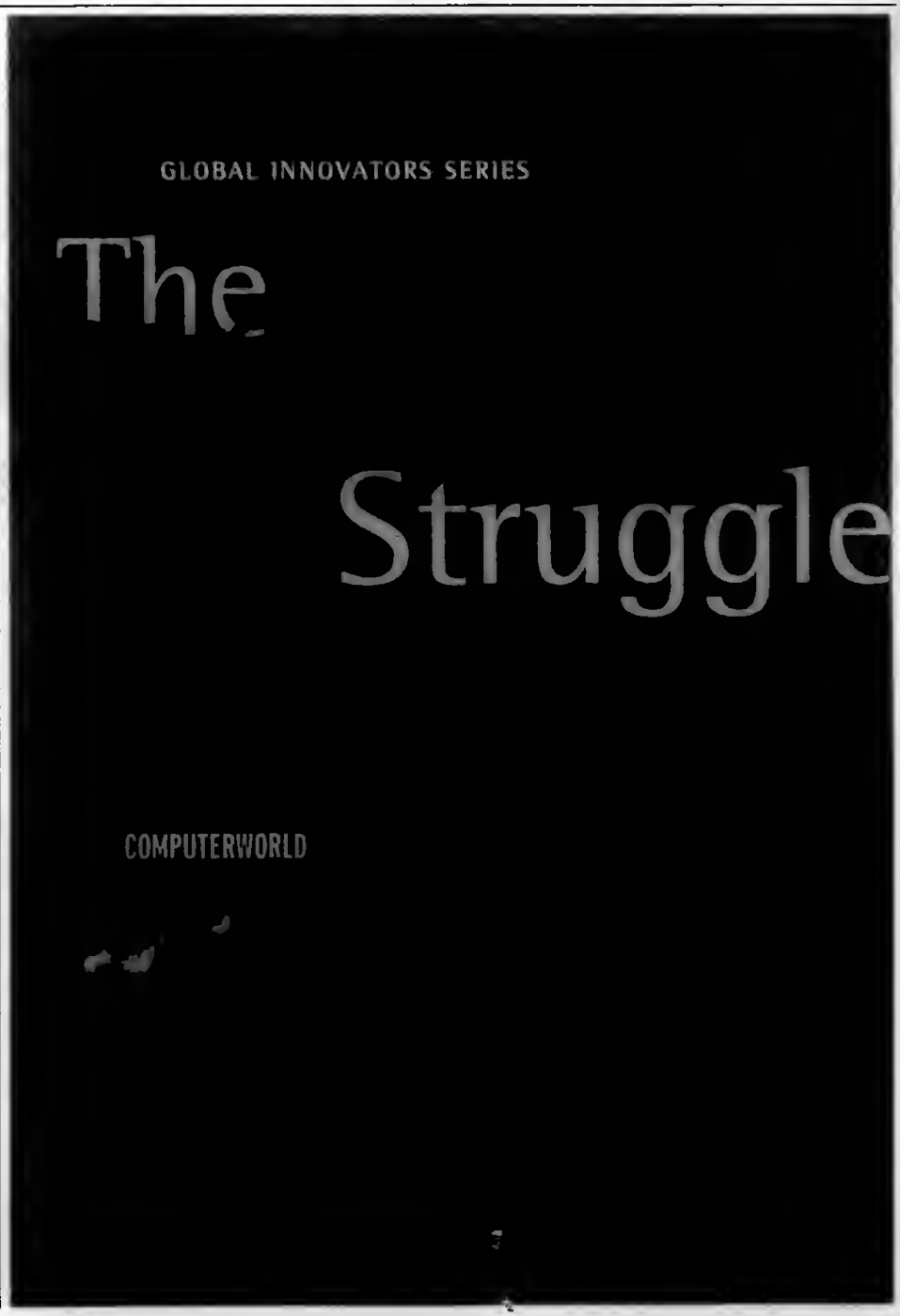
The venture will work because of the familiarity of *Newsweek* and the *Post* as national brand names, Pappajohn said. But the two publications have plenty of online competition: Gannett Co.'s *USA Today*, Time Warner Inc.'s Cable News Network and The New York Times Co. also have added electronic commerce to their sites, said Mark Mooridian, an analyst at New York-based Jupiter Communications Inc.

Another analyst said the online shopping venture, as well as the publications' attempt to attract local retailers, will be difficult.

The two media veterans will have a hard time bringing in local retailers because those retailers will have to have a Web presence and compete with the bigger retailers such as Amazon.com, said John Robb, an analyst at Gomez Advisors in Concord, Mass.

MarketPlace has a difficult road ahead because readers don't go to the *Post* or *Newsweek* to buy products, Mooridian said.

But online shops do want "contextual" experiences such as the one MarketPlace offers, he added. □



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NEW PRODUCTS

ADOBE SYSTEMS INC. has announced ImageStyler 1.0, a Windows or Macintosh Web graphics design tool.

According to the San Jose, Calif., company, the software helps users create rollover effects and live objects without the need for manual JavaScript coding.

An auto-layout feature speeds site production, and users can update their sites through batch graphic creations.

The software costs $129.

Adobe Systems
(408) 536-6000
www.adobe.com

MACROMEDIA has announced Dreamweaver 2, a graphical Web-authoring environment for Web site design, publication and management.

According to the San Francisco company, the software features enhanced table support as well as live Flash and Shockwave playback.

Dream Templates ease team authoring by managing contributor-specific access rights while maintaining sitewide design consistency. support for round-trip Extensible Markup Language (XML) promises to leave a user's XML code intact.

Dreamweaver 2 costs $299.

Macromedia
(415) 252-2000
www.macromedia.com

NETWORK APPLIANCE INC. has announced NetCache C700s, an Internet caching device designed to reduce bandwidth congestion and accelerate application performance.

According to the Santa Clara, Calif., company, the entry-level appliance has its own operating system and sits outside a company's firewall.

It supports up to 8,000 concurrent connections with a throughput of up to 440 uniform resource locators per second. Integrated RAID technology also is included.

Pricing starts at $19,995.

Network Appliance
(408) 367-3000
www.netapp.com

RAMP NETWORKS INC. has announced WebRamp 310E and WebRamp 310I, Internet access devices for branch offices.

According to the Santa Clara, Calif., company, the 310E offers three external modem connections, and the 310I offers two internal 56K bit/sec. modems and one external port for an Integrated Services Digital Network connection.

Applications for virtual private networking, access management, domain-name server caching, compression and remote dial-in also are included.

The 310E and the 310I cost $699 and $849, respectively.

Ramp Networks
(888) 726-7638
www.rampnet.com

IBM has announced Web Cache Manager, a caching system that delivers frequently requested Web information directly from local storage.

The appliance uses two kinds of storage media: 7133 serial disk and Magstar MP tape. Hierarchical storage management software migrates older and larger Web objects from disk to tape, clearing disk space for smaller, more popular objects.

The appliance costs $195,000 for a 1T-byte system.

IBM
(914) 499-1900
www.ibm.com

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Briefs

Notes vs. Exchange

The "Electronic Mail and Messaging Systems" newsletter recently reported that Lotus Development Corp. outshipped Microsoft Corp. in E-mail products in the third quarter this year, after lagging a bit in the first and second quarters.

Lotus added 3.4 million new Notes users during the third quarter ended Sept. 30, compared with Microsoft's 3.2 million new Exchange users. Those figures refer to client software licenses.

High-volume VPN

Compatible Systems Corp. in Boulder, Colo., last week unveiled an eight-slot version of its IntraPort Enterprise VPN Access Server, a virtual private network device that can support up to 40,000 simultaneous connections. Pricing for the IntraPort Enterprise-8, which will ship by year's end, is $50,000.

3Com ships big switch

3Com Corp. in Santa Clara, Calif., has announced the CoreBuilder 9400 Gigabit Ethernet Switch, a 24-port 1G bit/sec. system designed for building and campus backbones. The CoreBuilder 9400 will ship in the first quarter of next year at $29,995 for a base chassis with 12 1G bit/sec. ports.

What one hour of network downtime costs your industry

Brokerage	$160,000
Credit-card sales authorization	$160,000
Pay-per-view services	$130,000
Home-shopping channels	$100,000
Catalog sales	$90,000
Airline reservation centers	$80,000

Source: Contingency Planning Research, Livingston, N.J.

WEB FEATS

Consider the following when developing an E-mail response management plan:

1. How many E-mail messages per day you receive through your Web site
2. Who will answer the questions you receive through Web site E-mail
3. Does your site make it easy for customers to ask specific questions that will affect their buying decisions
4. Do you just want to answer the E-mail, or do you want to use the inquiries for value-added marketing and customer information
5. Is customer responsiveness and how quickly you answer inquiries a significant differential in your industry

Source: GTE Web Solutions Group, Chantilly, Va.

E-mail tools manage data, improve response

By Roberta Fusaro

CUSTOMER SERVICE

EFFECTIVE E-MAIL response has become essential as companies interact with their customers more often through Web sites and other electronic means. But many organizations are lagging in this area.

New York-based research firm Jupiter Communications Inc. recently found that almost half of the top-ranked Web sites took longer than five days to reply to customer E-mail inquiries or never replied [CW, Nov. 16].

And Forrester Research Inc. estimates that because of the ubiquity of E-mail, a company that receives 500 E-mail inquiries per day today will receive 2,000 per day within the next two years.

David Cooperstein, an analyst at Cambridge, Mass.-based Forrester, said many companies just don't realize that the first thing a Web site generates is a flood of E-mail. So companies often are operating in reactive mode.

Automated E-mail management software can sometimes help manage the flow, analysts said, while culling valuable customer data from E-mail.

For instance, Charles Schwab & Co. in San Francisco was immediately able to categorize up to half of its incoming E-mail after installing Aptex Software Inc.'s SelectResponse on top of a Vantive Corp. customer service application a year and a half ago. That figure may now be up to 75% of E-mail, according to Schwab officials.

"When we established the Web site, we started to get lots of E-mail and realized we had better put something in place to conduct triage," said Mary Kelley, vice president of databases and marketing at Schwab. The brokerage has 2 million online accounts and handles between 3,000 and 8,000 E-mails per week.

E-mail, page 52

How to survive network upgrades

By Bob Wallace

ADVICE COLUMN

Guidance that experienced IT managers give peers preparing for network upgrades:

- Develop a change management system
- Plan for 50% more bandwidth than you need
- Test all new equipment for interoperability
- Install network monitoring gear
- Run old and new networks in parallel as fallback

Source: Computerworld, Framingham, Mass.

COMPANIES ARE upgrading their networks at an increasing pace to keep up with the demands of bandwidth-intensive applications, Internet use and company growth, according to analysts. But those that proceed without taking important steps risk failure.

"We're seeing unprecedented demand for bandwidth," said John Armstrong, an analyst at Dataquest, a research and consulting firm in San Jose, Calif. And networks are barely keeping pace with their users. "[For managers], it's been like adding another lane on the freeway. You fill it right up," he said.

Bandwidth planning is key to a successful upgrade, according to Niraj Patel, CIO at GMAC Commercial Mortgage Corp. in Horsham, Pa. "The key is to take what you think you'll need and add 50% more, as it's very difficult to predict new applications and plan for company growth," he said. In the past few years, rapid expansion and video packages have driven GMAC to upgrade its backbone network to 100M bit/sec. Fast Ethernet and most recently to Gigabit Ethernet. "We've found it's best to take it to the next level [of available bandwidth]," Patel said.

"That's a very good rule of thumb for users because whatever you think you'll need, you'll need more," Armstrong said.

Rushing an upgrade can make things worse, according

Network, page 52

Hey! Where's that ambulance going?

▶ *FCC may require companies to update PBXs to pinpoint location of emergency calls*

By Matt Hamblen

IF A WORKER late one night finds a colleague collapsed from an apparent heart attack and dials 911, will your company's telephone system bring the rescue team to the proper building and floor?

Or is it possible the paramedics will have only the corporate headquarter's building address as a reference point, and show up blocks, if not miles, away?

Hoping to avoid such a snafu, many telecommunications managers are upgrading

Where's, page 52

Network upgrades

CONTINUED FROM PAGE 51

to experienced network managers.

"It's critical that companies use change management systems so they can track and schedule work on the network, [as well as] making sure the right people find out about the planned changes," said Ken Cieszynski, a staff engineer at United Airlines Inc. in Elk Grove Village, Ill. The "system" United uses is actually a process whereby anyone planning an upgrade submits it to a group that tracks all such efforts, he said. The group then schedules the requested upgrades and notifies the users involved.

And before rolling out new equipment to its more than 300 sites worldwide, United makes time for interoperability testing in a special laboratory staffed by full-time technicians, Cieszynski said. "We take the opportunity to test for year 2000 compliance while we're at it. We don't want that coming back and biting us," he said.

And managers should take advantage of an upgrade to install tools that monitor network usage, which can be used once the infrastructure is upgraded to spot potential problems before they can affect the network, according to Patel. "If you don't do it then, you're likely to get sidetracked, and you may end up doing it down the road when problems arise. You need to know network utilization on Day 1," he added. "The tools will cover most of your headaches in the long run."

"If you don't install monitoring tools then, you go back to eventually fighting fires with limited staff," agreed John Morency, vice president at Renaissance Worldwide Inc., a consultancy in Newton, Mass.

TAKE A PARACHUTE

And to keep things stable during the migration, Steve Lopez, network manager at the National Board of Medical Examiners in Philadelphia, recommends putting users on the new network but not taking down the old network until the new one is running as planned.

"Otherwise, if something goes wrong [on the new network], you have no fallback, which means business processes and procedures are disrupted," Lopez said.

Running both networks in parallel until everyone's safely aboard the new one is more expensive, Lopez acknowledged. But "it gives you a much higher chance of success," he added. "Most companies see their networks as critical to their business and can't afford mistakes."

"If you don't install monitoring tools then, you go back to fighting fires with limited staff."
– John Morency, Renaissance Worldwide

That's solid advice for large companies that have extensive investments in their old networks and can't quickly move legacy items such as older protocols to the new network overnight, said Esmerelda Silva, an analyst at International Data Corp., a Framingham, Mass.-based consultancy and sister company to *Computerworld*. □

Where's that ambulance?

CONTINUED FROM PAGE 51

their 911 service, which sometimes costs millions of dollars. They're reacting partly in response to laws in Washington and Illinois, and under consideration elsewhere, that require automatic notification of the exact location of each phone.

But an attorney for the Communications Managers Association, a large user group, said he hopes the Federal Communications Commission will decide early next year to recommend rules that would impose a less stringent, but still difficult, standard nationwide, which would eliminate a patchwork-quilt of approaches. Those rules would require giving the location of phones within 40,000 square feet of office space.

The FCC could decide by next April whether to impose such terms, which are based on a consensus agreement reached in April 1997 between business and rescue groups, according to parties to the agreement. But an FCC attorney said the agency is under no requirement to act.

"It's a sleeper issue, and because network managers are spending so much time on year 2000 work, I don't think too many companies are aware of this potential ruling," said Matthew D. O'Brien, former president of the Communications Managers Association. "You never know if the equipment providers would hit you hard for an upgrade to make each location compliant."

A nationwide company would need to provide a database and hardware to work with each of its private branch exchange (PBX) switches to route the approximate location of each desktop to a local carrier and on to a 911 rescue center, analysts said. Usually, one PBX is needed per corporate campus.

PBXs already keep data on routing calls, but the new proposal could require on-premise network interfaces that work with the PBXs and provide detailed locations for each phone line to the 911 service provider, analysts said.

WHAT'S THE PRICE?

James Blaszak, a partner at the Washington-based law firm Levine, Blaszak, Block & Boothby, said one large company in the Midwest spent $6 million to design the proper database. He estimated it will cost $150,000 annually to maintain it.

However, a spokeswoman for Ameritech Corp. in Chicago, said costs for a onetime conversion to meet the Illinois requirements may vary widely depending on size and complexity, from a low of $3,000 up to $100,000.

Blaszak said the FCC may be reluctant to impose a requirement, fearing the political ramifications of seeming to take power away from the states. But some large multinational companies might favor a consistent FCC approach, rather than face a number of standards in various states, he added.

The FCC consensus agreement provides exceptions to the locator requirement, such as for companies that employ a PBX operator who can help respond to an emergency during normal working hours.

Also, timing under the FCC agreement could be critical. Any company installing a multiline telephone system within two years after an FCC ruling would have seven years to meet the locator rules. But new systems installed beyond the two-year period would have to be immediately compliant with the rules. □

E-mail management tools

CONTINUED FROM PAGE 51

Schwab promises an E-mail response in 24 hours and generally responds within six hours, Kelley said.

E-mail response management software comes in two main flavors, according to Donna Fluss, a research manager at Gartner Group Inc. in Stamford, Conn. The first is routing and tracking software, which manages the course of E-mail through an organization by scanning for keywords in the subject line or body of a message and delivering it to the appropriate person.

Vendors include Adante, EGain Inc., Mustang Software Inc. and Kana Communications Inc.

The second flavor is content-analysis software, which applies case-based reasoning to a query and can automate responses. Vendors include Brightware Inc. and Aptex, which recently announced Version 3.0 of its SelectResponse software.

Access National Mortgage in Wilmington, Mass., has seen a 200% increase in Web traffic in the past four months, as it has started to expand its services nationwide, said Sean Marsh, a marketing vice president at the company. "If all the E-mail queries land in one place and you've got one person answering them all, they have to know everything," he said.

If that person is uninformed, he or she can spend a tremendous amount of time processing information and determining who the question should go to, he added.

Access already uses Brightware's Answer agent to route and respond automatically to customer queries. It's now adding Brightware's recently released Contact Center module, which uses artificial intelligence to answer more complex queries, Marsh said.

But packaged products aren't the only route.

DHL Worldwide Express in Redwood City, Calif., runs a homegrown application that routes incoming E-mail queries to customer service representatives in whatever country the question regards, said Alan Boehme, director of business planning at DHL.

The application can handle complex questions about customs regulations that would flummox commercial software, Boehme said.

"If a software program can [send you back] a messages saying you didn't fill out your form correctly, that really doesn't help," he explained. □

Aditi's Talisma: E-mail tool extraordinaire

Although there are several products available to automatically respond to customer E-mail, one recent addition is taking an unusual approach.

Bellevue, Wash.-based Aditi Corp. recently shipped software called Talisma that's aimed at companies that need to churn out personal responses to messages sent to corporate aliases. It was designed to let customer service representatives go through lots of E-mail and quickly pick the right canned or automatic response for that message. Many users can share the same mailbox, and managers can use it to prioritize messages and assign them to customer service representatives.

Talisma also includes a customer database that tracks the history of customer interactions, including E-mails and phone inquiries. As a result, customer service representatives have a customer's history available to them when responding to an E-mail.

"I can only make so many phone calls each day," said Tom Willard, principal of Evereste Interactive, a Seattle-based marketing company whose clients are mostly software companies that sell Web-related products.

Willard uses Talisma to interact with his clients and track his E-mail conversations, phone calls and other customer information.

Available now, Talisma costs $1,995 per seat, but the company is offering an introductory price of $995 per seat until Dec. 31. — Barb Cole-Gomolski

Software

Databases • Development • Operating Systems

Briefs

HR app comes to U.S.

Meta4, a Spanish developer of human resources applications, last week announced the U.S. release of its software as part of an attempt to become more of a global vendor.

Support for U.S. users is being added in Version 3.0 of the Meta4Mind software, Meta4 said. Pricing for the software, which will also be marketed by Dutch application vendor Baan Co., starts at $750,000. The product is aimed at companies with more than 1,000 employees.

Rapid ERP deployment

Mapics Inc., an Atlanta-based maker of manufacturing applications, last week became the latest enterprise resource planning vendor to announce a rapid deployment scheme for its software.

The Mapics Standard Methodology spells out a standardized implementation road map for users who want to speed up installations of the company's Mapics XA software.

The road map is included with the software.

Quicken for PalmPilot

Intuit Inc. in Mountain View, Calif., and LandWare Inc. in Oradell, N.J., recently announced Pocket Quicken for 3Com Corp.'s PalmPilot handheld devices.

The product will let users input checking, credit-card and cash transactions while on the road to easily upload the information to Quicken on desktop PCs. It will be released late next month; pricing starts at $29.95.

Windows scripting

Wilson WindowWare Inc. in Seattle has released WinBatch Studio, the graphical development environment for its $100 WinBatch and $495 WinBatch++Compiler scripting and batch-control tools for Windows 3.1x, 95, 98 and NT 4.0 PCs and servers.

The Studio environment is now shipping with the WinBatch tools.

Source code search quells fear

▸ *Warnings about lost code mostly wrong*

By David Orenstein

IN THE PAST few years, year 2000 observers have warned that missing source code could make it harder for companies to prepare their systems for the century change.

But it turns out that many companies have done a good-enough job managing their source code — although with some painful lessons along the way — so that missing source code isn't a major problem in their year 2000 work.

Although at least a little legacy code has turned up missing in many large corporations, users said that so far they have managed to avoid major delays or added expenses.

Year 2000 managers who have dodged this bullet consider themselves fortunate and have a reinforced respect for company practices that were designed to keep source safe, sound and around.

Source code is the editable code that makes up an application. It must be compiled before the application can be run. An application can run without source code, but developers can't correct or update the application, making it difficult to fix year 2000 problems.

Companies without a solid system for storing and maintaining their source code — which is often more than a decade old — could face delays and extra expenses in their year 2000 work.

Meta Group Inc. in Stamford, Conn., estimates that 2% to 4% of legacy source code at Global 2,000 companies is missing, analyst Carl Greiner said.

Source code, page 54

Look before you leap at pricing models

By Jaikumar Vijayan

THERE IS NO one-size-fits-all solution when it comes to choosing enterprise software licensing options.

New pricing models from several software vendors are giving users more flexibility in how they pay for software. But users need to be judicious about how they exercise these options. Pricing formulas that work well in one environment may not in another, users, analysts and vendors cautioned.

A case in point is the new "points-based" pricing that was announced by vendors such as BMC Systems Inc. and Candle Corp. Those schemes were designed to give users more flexibility when upgrading hardware or when moving software from one hardware platform to another — for instance, main-

Pricing, page 54

Net enables presentations to change fast

▸ *Multimedia app helps Reebok reps show up-to-date data*

By Nancy Dillon

MOST SALESPEOPLE want it all: snappy multimedia presentations as well as up-to-the-minute data.

That makes life difficult for most marketing folks because simple product changes can spark a mad scramble to either ship new multimedia applications to every road warrior or shepherd monster downloads over modem lines.

But such scrambles may soon become a thing of the past at Reebok International Ltd. in Stoughton, Mass.

Salespeople for the fitness clothing maker are using a new CD-ROM-based multimedia presentation — complete

Reebok, page 56

Format of old data slows migration of land records

By Stewart Deck

Oil drilling on public land in Farmington, N.M.

WHAT'S THE OLDEST data record you have? Ten years of canceled checks? Yellowed love letters? A family Bible?

The U.S. Department of the Interior's Bureau of Land Management has some data that stretches back more than 100 years. The bureau keeps track of oil and gas leases, rights of way, mining claims and land patents for 300 million publicly owned acres across the U.S.

This 1 billion-record storehouse sits in four databases on a 15-year-old, year 2000-noncompliant, Honeywell-based mainframe system. But the bureau wants to bring the whole thing up to date to make it accessible to the public.

As the bureau prepares to transfer that data into an Informix Corp. relational database, it needs to analyze that source data to be sure it's consistent and accessible, said Leslie Cone, a project manager at the bureau, based in Denver. "We need to do this to make sure we know where to put it and make sure we understand the relationships between the data so that we can correctly build our data models," Cone said.

On the most basic level, Cone has to make sure that every format in which a territory is

Cleaning up data, page 54

Source code

CONTINUED FROM PAGE 53

Although the proportion of missing code seems to be a small fraction, it's still millions of lines, and some of the code is critically important. "We don't know what the numbers are [among smaller companies]. It could be a lot worse," Greiner said.

"We don't know what the numbers are [among smaller companies]. It could be a lot worse."

–Carl Greiner, Meta Group

But as time goes by and companies move or merge, small amounts of source code can disappear. The Equitable Life Assurance Society of the U.S. in New York used The Source Recovery Company LLC (SRC) in Framingham, Mass., to reverse-engineer missing Cobol and assembler code in about 50 applications, said Katherine A. Nolan, director of Equitable's application development group. SRC restored a total of about 50,000 lines.

There are a number of ways code may have been lost, Nolan said. The company's data center has moved twice, and some code was stored on tapes that deteriorated.

Also, many of the applications hadn't been altered in years.

The recovered code has been added to a secure repository, Nolan said.

So far, BankBoston has been able to find all of its source code, said David Iacino, senior manager of BankBoston's millennium project. The company has only 10 more applications to fix and test out of several hundred. "I suppose we're lucky," Iacino said.

JOHN SOARES

Although BankBoston was prepared for its battle with the year 2000 problem, its preparation has come from years of learning — sometimes from mistakes — about how to preserve its source code.

"These practices have evolved over time," Iacino said. "We're not without sin."

BankBoston, which as a bank is frequently audited, keeps close track of source code, which it keeps in a library that is subject to a change-control policy.

The policy was designed to ensure that the most current source code is protected from erasure or accidental overwriting with older code.

In a practice that Greiner said is very common, BankBoston also keeps track of the financial health of its vendors and consultants and asks that their code be stored in escrow, so that it can be recovered if the companies start to fail.

Stan Politowicz, manager of year 2000 remediation at General Motors Corp.'s vehicle sales and service marketing unit, said source code turned up missing in only a couple of applications that are being retired anyway.

Politowicz cited tight code-handling practices at GM as the reason the company hasn't been overwhelmed. □

Pricing

CONTINUED FROM PAGE 53

frames to Unix servers. By usually paying more up front, customers don't have to buy new licenses or expand existing licenses every time they shift software from one platform to another or from one location to another [CW, Nov. 9].

GROWING COMPANIES

The point-based options can save corporations money "if you are growing or expanding or there are a lot of unknowns about the kind of platforms you expect your software to be running on two or three years from now," said Barry White, manager of information systems at Hewitt Associates Inc., a human resources outsourcer in Lincolnshire, Ill.

"But in solid environments where there is little likelihood of change, there is little need for this kind of option," White said. That's because, unless users specifically need the flexibility to move software from platform to platform, there's little need to pay for it.

Similarly, some of IBM's new usage-based pricing schemes work best only in certain situations, said Patricia Cicala, an analyst at Gartner Group Inc. in Stamford, Conn. Under usage pricing, software charges are based on actual use of a particular piece of software, compared with capacity-based pricing in which the price for running a piece of software — however small the application — depends on the overall capacity of the hardware platform.

The usage option is particularly attractive when applications consume less than 25% of a system's resources, Cicala said. "But if you are using more than 25% of a system, it really isn't the best option," she said. In such cases, capacity-based pricing may be less expensive.

One customer who has already weighed the various pricing models is Roland Akosah, a senior asset analyst at the Student Loan Marketing Association, also known as Sallie Mae, in Reston, Va.

SOFTWARE PRICING OPTIONS

- **MIPS- or capacity-based pricing: Software is priced based on the capacity of the system it's running on**
- **Usage-based pricing: Price is tied to actual software use**
- **Point pricing: Users buy "license points" based on aggregate hardware capacity**

Sallie Mae is taking advantage of the usage options on some of its IBM IMS database applications — a move that will save the company about $120,000 this year. But it's keeping most of its DB2 middleware on capacity-based pricing, Akosah said.

The company was able to take advantage of usage pricing on its IMS database because the application took up only a relatively small portion of overall system resources and because asset-management tools let the company know exactly how much the database was being used, Akosah said. □

NEW PRODUCT

NETWORK ASSOCIATES INC. has announced Total Virus Defense 4.0, a suite of desktop and server applications that provides virus detection and cleaning.

According to the Santa Clara, Calif., company, the suite was designed to catch more than 22,000 viruses, hostile ActiveX or Java applets and infected Internet downloads or E-mail attachments. It now includes Anti-Virus Informant, a reporting tool with distributed polling engines that gathers data on network functions. The new tool can provide outbreak analysis, return-on-investment analysis and deployment statistics. Pricing is $18 per user for 5,000 users.

Network Associates
(408) 988-3832
www.nai.com

Cleaning up data formats

CONTINUED FROM PAGE 53

mentioned — New Mexico, N.M., New Mex. or NM — are all understood to mean the same thing. And for the bureau, the relationships among the data are important because one land citation may have records about oil, water, mining claims and rights-of-way attached to it.

META DATA MANAGEMENT

When the bureau started the project last April, staffers tried to check source data quality by testing data samples. "But we ended up spending a lot of time analyzing whether our samples were representative and not really getting much closer to the data itself," Cone said. "We just have too much data and too many relationships between the data to do that efficiently."

Data warehouse and data mining projects often suffer delays because the people running the projects don't know enough about the source data, said Richard Winter, an independent consultant at Winter Corp. in Boston. "Source data comes from systems that were implemented by people who are long gone and that are inadequately documented. Anybody who has loaded a large volume of data into a database knows that you spend a tremendous amount of time and energy dealing with the nuances and exceptions of data values and relationships," Winter said.

"Until we found software that could handle it, we were even trying to compare samples by hand," recalled a frustrated Cone. The software the bureau turned up is a $250,000 package called Migration Architect from Evoke Software Corp. in San Francisco. It lets them look directly at the data and clean it up before transferring it.

"We can look at the [data] rows and know if we have the right links, the right number of characters and whether it was correctly entered," Cone said. The software scans data and picks out only the pieces that seem to be in the wrong format or that differ in other ways from the model the bureau expected to see, reducing the amount of data to be examined.

Ralph Nordstrom, data warehouse architect at the Automobile Club of Southern California (ACSC) in Costa Mesa, Calif., also knows how time-consuming analyzing data quality can be. The ACSC — a branch of AAA — uses Migration Architect to move data from legacy flat files into its 15G-byte Oracle Corp. data warehouse.

"If data in the warehouse is only 80% accurate, you can't make important business decisions based on it," Nordstrom said. "I would never attempt to do this type of analysis without a tool like this." □

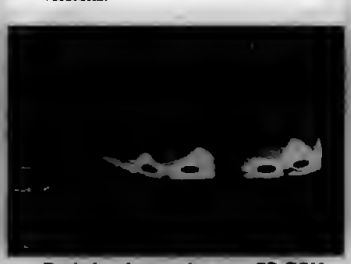
Reebok presentation software

CONTINUED FROM PAGE 53

with three-dimensional, virtual-reality landscapes — that can resynchronize with headquarters over the Internet. When changes in the CD-ROM's product database occur, such as new pricing, styles or availability, users can phone home to download only the changes.

The CD-ROM was created using Apple Computer Inc.'s QuickTime and Macromedia Inc.'s Director.

San Francisco-based Macromedia announced Version 7.0 of Director last week. The software previously supported the HTTP Web protocol, but the new version adds support for two-way communication using Common Gateway Interface scripts as well as secure transactions using HTTP Secure. Director is available in both PC and Macintosh versions.



Reebok salespeople use a CD-ROM-based multimedia presentation — complete with 3-D product models

"In a market like fashion, products change all the time," said Jim Baker, managing director at StudioSource, the Novato, Calif., design firm that created Reebok's CD-ROM.

"Internet connectivity lets us deliver a base CD with core content that can be updated remotely as needed." Baker said. "We don't have to do a complete [CD-ROM] overhaul every season."

Other new features in Director 7.0 include a rebuilt playback engine and an integrated, multiuser server that enables Internet chat rooms, whiteboards or multiplayer games.

MARKET SHARE

According to Gartner Group Inc. in Stamford, Conn., Macromedia's Director has more than 50% market share among applications that let users incorporate external files into a playback environment. Director's main competitor, with about 10% market share last year, is MTropolis from Denver-based Quark Inc., but Quark killed further development on MTropolis in April.

Despite Director's market dominance, "it's not something you just pick up and use. It's complex," said Joan-Carol Brigham, an analyst at International Data Corp. in Framingham, Mass., a sister company to *Computerworld*.

She said multimedia newcomers can start out by adding bits of sound and animation to presentations created by familiar products such as Microsoft Corp.'s PowerPoint.

Users of Quark's publishing software, QuarkXPress, can also try QuarkImmedia.

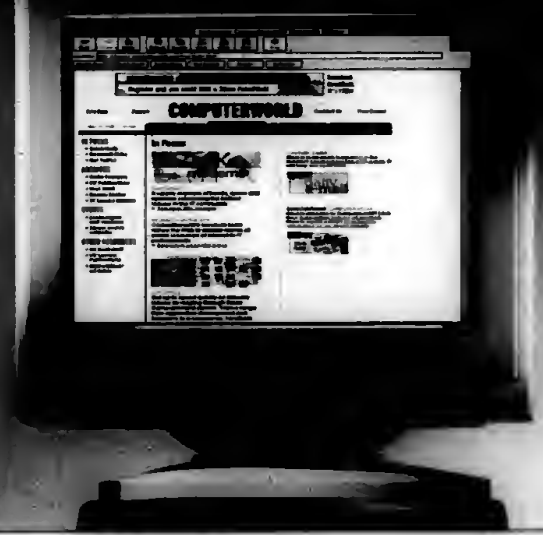
QuarkImmedia 1.5, announced last month, is a QuarkXPress plug-in that allows users to create CD-ROMs or Intranet projects that incorporate QuickTime movies, audio and animations. The authoring tool is restricted to the Macintosh platform, however.

Five months ago, Deloitte & Touche LLC's Western-region tax practice revamped its employee-recruiting package with materials created in both QuarkXPress and QuarkImmedia.

"We weren't repurposing any existing [QuarkXPress] materials, but we knew we wanted to create print pieces in concert with a video-intensive CD-ROM," said James Mooring, manager of communications at Deloitte & Touche's Los Angeles office.

"I had some experience with Director, but the programming end of it was a bit intensive," Mooring said. "I wanted a tool I could use fairly quickly." □

online product info



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COMPUTERWORLD

Novell tools check nets for year 2000 problems

By Sharon Gaudin
LAS VEGAS

CORPORATE USERS have two new tools from Novell Inc. to help them fend off year 2000 problems.

While they're not the most powerful tools out there, analysts and users agreed that they can help some users even at this late date.

At the annual Comdex/Fall '98 show here last week, Novell showed off a free, stand-alone tool, the Network Ferret, that inventories the software on networks so users can see what might need a year 2000 update.

Novell also shipped the latest version of its desktop management tool, ZENworks 1.1, which now includes CheckMate 2000, a year-2000 compliance checker from Greenwich Mean Time in the U.K. Novell originally announced the bundle in August.

"For a company with a hodgepodge of systems and servers, those tools could be important," said Jim Graham, a specialist in the architecture and technology department at BellSouth Corp.'s Business Systems division in Atlanta. "There can be a lot of differences just between one product version and another. And finding those little differences can be a big deal if you're talking Y2K."

Novell's new year 2000 tools

CheckMate 2000: Designed to find problems, push down fixes and do maintenance checks.

Network Ferret: Designed to check Novell systems for which products and versions are installed. The list is then sent to Novell, which will report back needed fixes and upgrades.

"It's not terribly exciting," said David Kelly, an analyst at Hurwitz Group Inc. in Framingham, Mass. "But people do need help with that. It's the basics that will bite them in the butt. With a LAN, there can be a lot of software in a lot of places. Having a utility run through and check versions is going to save some good time."

THERE'S STILL TIME

Kelly said it would have been helpful if users had these tools six months ago. "But it's not too late," he added, "since a lot of people haven't dealt with their problems yet."

Stephanie Benoit, academic computing coordinator at Community College Southern Nevada in North Las Vegas, said the college tried Network Ferret and found it to be helpful.

"As big an environment as we have and as fast as it's growing, this gives us a chance to see where we are and where we're not and what changes we need to make," Benoit said. "It's a lot easier than getting everyone together to check their servers in all 12 sites."

Network Ferret is designed to run through all of a company's Novell servers and tools, creating a list of what products are on the system. That list is then sent to Novell, where a report is created and shipped back to the company. The report is designed to tell administrators exactly what they have on their system, what is year 2000-compliant, what isn't and what patches or fixes are available.

CheckMate was designed to check NetWare products and applications that run on top of them for year 2000 problems. It also was designed to push fixes and patches down to the desktops or servers, as well as continue to administer maintenance checks on the system to make sure problems haven't been added with any new software additions. □

Servers & PCs

Large Systems • Workstations • Portable Computing

Briefs

Thin client supports IE

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Ruggedized notebooks

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Powered by a 266-MHz Pentium MMX processor, the Toughbooks were designed to be water-resistant and dust-proof for use outdoors. The active-matrix display uses an antireflective filter, which reduces light reflection to less than 1%, enhancing legibility. The Toughbook was designed to withstand a 3-foot drop, company officials said. Pricing starts at $3,999.

New OS gets support

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Users can toggle between the operating systems. Japan's Hitachi Ltd. is the first PC maker to bundle BeOS 4.0. The company will include it with Windows 98 on three Japan-only models next month. Be officials said similar deals with U.S. vendors are imminent.

Handhelds ease NYSE trading

By Thomas Hoffman

GOLDMAN, SACHS & Co. has been able to improve the productivity of 20 floor brokers by 300% by making their handheld devices even simpler than the pads of paper they once used to scribble down all-important "looks," or bids on stock prices.

Floor brokers for the venerable Wall Street brokerage have been using Microsoft Corp.'s Windows CE pen-based systems since August to provide looks based on requests from stock traders perched above the floor of the New York Stock Exchange (NYSE). Historically, the floor brokers would receive such a

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1997 worldwide standard handheld shipments

Total market: 1.6 million units

Source: Dataquest, San Jose, Calif.

THE ASSOCIATED PRESS

The Bellagio hotel's centralized application and server model helps staff keep track of up to 3,000 guests and keep its gambling pits online

Thin is in at luxe casino

▸ *Vegas hotel opts for thin clients over PCs*

By April Jacobs
LAS VEGAS

THE BELLAGIO, the newest hotel and casino in Las Vegas, complete with a fine-art gallery and Italian Renaissance-inspired decor, cost $1.7 billion and took five years to build.

It's also a bastion of thin-client architecture. Because apart from having the goal of becoming a first-class resort, the casino is an around-the-clock technology operation with a complex, $25 million information technology infrastructure that supports everything from gambling pits to restaurants that serve thousands of guests and employees.

So when it came time to figure out a way to minimize support costs and ensure uptime, Glenn Bonner, CIO at Bellagio owner Mirage Resorts Inc., decided to eliminate what he viewed as a potential obstacle: the PC.

"Imagine a pit boss calling and saying that [his] PC is down. In five minutes, your whole guest-service model flies out the window," Bonner said.

He said the need for continuous uptime led the company to conclude that a centralized application and server model using thin clients was the way to go. The "bricks," as IT refers to the clients, rarely break, and any service or troubleshooting can be done from a central location.

The simple-client theory also carried over to the company's

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Microsoft helps NT/Unix make nice

▸ *Joins others offering add-on integration packs*

By Jaikumar Vijayan

MICROSOFT CORP.'S new Windows NT Services for Unix add-on pack should make integration of the two types of systems easier.

Information technology managers spend a "huge amount of time administering Unix and NT" in mixed environments, so they'll welcome the forthcoming offering, said David Krauthamer, director of IT at Advanced Fibre Communications, a Petaluma, Calif., manufacturer of communications equipment.

The resource-sharing capability in the Microsoft pack, announced two weeks ago, will let users in Windows NT environments access files and system resources in Unix and vice versa.

Similarly, remote-administration capabilities let users remotely log in to and execute commands on Windows NT and Unix systems.

A password-synchronization feature lets users maintain a common password between the Unix and Windows NT systems, while a common scripting feature lets common Unix commands and utilities be used in NT.

Developed with help from Intergraph Corp. in Huntsville, Ala., and Mortice Kern Systems Inc. in Toronto — both of which are major vendors of interoperability products — the Microsoft add-on pack will be available in about six weeks at a cost of $149.

Integration technologies such as these are important at a

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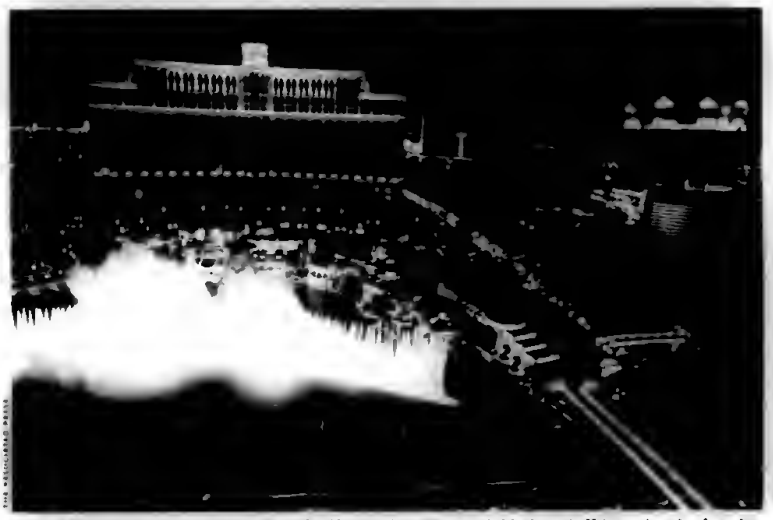

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Report pessimistic on portables sales

By Rebecca Sykes
LAS VEGAS

THE MARKET FOR portable computers next year will be pinched by users made cautious by worldwide economic hiccups and uncertainty over the year 2000-compliance issue. That's the conclusion of a new study that Framingham, Mass.-based market researcher International Data Corp. (IDC) released at Comdex here last week. IDC is a sister company to *Computerworld*.

User concerns about the year 2000 issue will benefit some vendors and hurt others, as users "lock down" their computer systems — and purchasing — during the second half of next year, said Randal Giusto, an IDC analyst. Users want to go through the year-2000 transition without also trying to manage the transition to new and unfamiliar components, Giusto said.

"At least the major accounts are going to be ultraconservative" during the second half of next year, and vendors that try to launch new technologies during that time could get a feeble sales response, Giusto said.

But conservatism includes spending money to ensure year-2000 compliance, and vendors who struck deals with their installed base to deliver compliance before the lockdown could do very well, he said.

The market for portable computers also will be affected by a growing trend in corporate purchasing. Technological attributes, such as overall system performance and expandability, are increasingly less important to corporate buyers than are nontechnology issues, including service and support, payment and leasing programs, and vendors' product scope, Giusto said.

In fact, technology received only two of the top 10 purchasing-decision spots in IDC's 1998 Portable PC Survey of about 300 buyers, he said.

Monetarily, the trend for portable price points is definitely down, with future demand for high-end, prestige laptops giving way to more midrange portables that can do more for less, Giusto said.

"The days of [spending] $3,500 and above for a laptop are going away," he said.

Continued economic troubles in Asia, along with their reverberations worldwide, could translate into tough sales for many vendors next year, Giusto said.

The U.S. contribution to that picture remains unclear, but the news worldwide isn't all bad, he said. Western Europe — including the U.K., France and, more recently, Germany — have come back strongly from earlier downturns.

And even in Asia, there are signs that improvement may be forthcoming, Giusto said. "The good news in Asia is that it seems like they've bottomed out," he said. □

Sykes writes for the IDG News Service in Boston.

Thin is in

CONTINUED FROM PAGE 57

thinking on servers. Bellagio focused on ways to eliminate potential problems — one of which was making sure that typical points of failure were minimized.

"We are always very concerned about footprint and pieces dying," Bonner said, noting that he and his team pay careful attention to typical points of failure such as power supplies and fans on the servers.

THIN AND THINNER

Bellagio has about 50 Intel-based servers from Round Rock, Texas-based Dell Computer Corp. Among other functions, the servers support about 2,000 thin clients, 1,200 of which are actually Windows-based terminals. The rest are PCs that function like thin clients — running their applications from the servers.

Bellagio chose Dell servers over those from Compaq Computer Corp. because the Dell line had Intel Corp.'s latest processor, the four-way Xeon. Yet the new line was a "tough leap of faith," according to Bonner, not merely because it was new but also because Mirage Resorts initially bought a couple of Compaq servers which it also uses at its other Las Vegas properties. Those include The Mirage and Treasure Island. "Timing is everything," Bonner said.

The company didn't worry that using thin clients would test its bandwidth because the application sessions run on the servers, said Craig Bender, lead systems engineer at Bellagio. The servers transmit only the user interface across the network to the client, rather than the large stream of data a PC-based client/server setup would require, he said.

Uptime at the company's front desk, where thin clients operate guest registration services, also helps guard against lost business, according to Katherine Schoeni, assistant manager of the front office. Downtime could frustrate potential guests, who might then go elsewhere for their lodging — and for gambling and shopping.

Bellagio's guest list can go as high as 3,000, said Schoeni, noting that on any given day the hotel deals with hundreds of arrivals and departures. The front desk system also is tied in with all guest services, from food service billing to in-room movies. □

BELLAGIO HOTEL

Date opened: Oct. 15

Guest rooms: 3,000

Room prices: $129 to $399 (suites: $300+) per night

Employees: 9,600

Owner: Mirage Resorts

Other properties: Treasure Island (1993), The Mirage (1989), The Golden Nugget (1982)

Systems (besides thin clients):

- Two $2.5 million Tandem computers used in providing $1 billion in casino credit per year
- Storage Technology tape silos
- Boole & Babbage CommandPost administration package
- McAfee help desk
- 3Com 3300 switches; Asynchronous Transfer Mode

Biggest computer problem so far: Compaq servers failed on the first Saturday the resort was open; operations moved over to the Dell cluster. "We proved we could run the hotel on a $20,000 machine," said CIO Glenn Bonner.

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CONTINUED FROM PAGE 57

time when a growing number of corporations are deploying Windows NT systems in Unix and proprietary environments, said Mary Hubley, an analyst at Gartner Group Inc. in Delran, N.J.

Microsoft's offering is only the latest in a flood of similar products, Hubley said.

The last major vendor to announce plans for such a product was Sun Microsystems Inc., which last month said it plans to ship new technology, called Project Cascade, that will deliver native NT administrative services on Sun's Solaris environment. □

Handhelds

CONTINUED FROM PAGE 57

request, say, for the going price on 10,000 shares of General Electric Co. stock, scribble down a response from a market maker and run it back to the trading desk.

But that process took at least five minutes, and the stock price information wasn't always accurate. Now, floor brokers can write down those responses on a Casio Inc. PA 2400 device running Windows CE 2.0 and transmit them to a trader within a few seconds over the Big Board's 2.4-GHz spread-spectrum network.

Using the handheld devices, Goldman Sachs floor brokers now can generate 450 to 500 looks per day, up from the 100 to 150 daily looks they averaged with conventional paper and pens. "We're in the information business, and if you can move information about the market faster than the next guy you're doing a good job," said John Hewitt, vice president of equities at Goldman Sachs.

Other exchanges have struggled to adopt handheld devices, including the Chicago Board of Trade and the NYSE. Their problems ranged from using systems that were too sophisticated to forcing the technology upon floor brokers who felt threatened by it.

"For an application to work well in a trading environment, the [graphical user interface] has to be really clean and simple," said Larry Tabb, an analyst at Tower Group, a Newton, Mass.-based financial services and technology consultant.

If an application requires too much effort and distracts a floor broker from concentrating on the market, "it's not going to be successful," Tabb said.

Goldman Sachs and development partner Microsoft took that simplicity to heart. For example, the handheld actually fits in the pocket of a broker's smock. Previous devices tested at other exchanges were bulky and required clunky battery packs that lasted only two hours at a clip.

Microsoft's Consulting Services division worked closely with Goldman Sachs' floor brokers to study how they worked. "These systems are designed to replace pads of paper, and that's kind of hard to do. You can write anything on paper. It always works," said Mitch Prince, a Microsoft consultant who worked on the project.

So Microsoft engineers built the screen on the handheld to look like a pad of paper. And they added a pull-down menu with a list of the most frequently traded stocks.

Because of the frenzied pace on the exchange floor, brokers' handwriting often is illegible, which would have made handwriting recognition difficult. So Goldman Sachs scans the images into the trading systems as it would with scraps of paper.

Goldman Sachs' management kept the floor brokers in the loop every step of the way. In fact, the head floor broker was part of the project team that traveled to Seattle, and he personally selected the Casio handheld device used, Hewitt said.

The next phase of the project is to use the devices for order execution between the floor brokers and the traders, perhaps by next summer. □

NEW PRODUCTS

NCR CORP. has announced the debut of the S50, a server node that supports one to four 450- or 400-MHz Intel Corp. Pentium II Xeon processors.

According to the Dayton, Ohio-based company, the Unix or Windows NT server can support the following: between 512K and 2M bytes of Level 2 cache, between 128M and 4G bytes of memory, two 32-bit Peripheral Component Interconnect buses and six bays for hard disk drives.

The NCR S50 also incorporates redundant, hot-pluggable hardware components and provides up to 10 LAN and 20 WAN connections with adapters for 10/100Base-T Ethernet, Token Ring, Asynchronous Transfer Mode and Fiber Distributed Data Interfaces.

The server costs $9,720.

NCR
(937) 445-5000
www.ncr.com

SPECTRA LOGIC CORP. has introduced the Spectra 10000F, a tape storage library that incorporates Sony Corp.'s AIT drives with Fibre Channel connectivity.

According to the Boulder, Colo., company, the library features a single 100M byte/sec. Fibre Channel connection and has 64-bit Peripheral Component Interconnect bus architecture. It uses AIT-1 drives and can fit 1.4T bytes of uncompressed capacity (3.64T bytes compressed) in 7 inches of standard rack-mount space.

Pricing ranges from $20,700 to $45,200.

Spectra Logic
(303) 449-6400
www.spectralogic.com

JETFAX INC. has announced the M900E series of multifunction facsimile machines.

According to the Menlo Park, Calif. company, the systems will allow users to send paper documents to E-mail addresses much in the same way they would send to fax numbers. No PC software or corporate network access is required. Users will be able to store both E-mail addresses and fax numbers in memory as well as incorporate password protection.

Pricing starts at $2,895.

JetFax
(650) 324-0600
www.jetfax.com

SYS TECHNOLOGY INC. has announced the Cool PowerHouse 600, a graphics workstation based on dual Pentium II Xeon processors from Intel Corp.

According to the Cypress, Calif., company, the system has a proprietary cooling system that enables the 450-MHz Xeon processors to run at 600-MHz speeds. It was designed for applications such as desktop publishing, animation, computer-aided design and manufacturing, as well as Internet development. The workstation has an integrated Intel Pro/100 Network interface card, six Peripheral Component Interconnect (PCI) expansion slots, a shared PCI/ISA (Industry Standard Architecture) slot and support for up to 2G bytes of memory.

Pricing starts at $7,000.

SYS Technology
(714) 821-3900
www.systechnology.com

ADVANCED DIGITAL INFORMATION CORP. has announced Amass for Windows NT, software that transforms automated libraries into shared network storage.

According to the Redmond, Wash., company, the software installs on a single server but allows everyone on the network drag-and-drop access to data in the attached library. Amass has a 64-bit online database that can track millions of files, so all searching and indexing is handled at disk speed. Only the actual reads and writes will access the library.

Pricing starts at $800 for Windows NT tape libraries and $3,000 for optical support.

Advanced Digital Information
(425) 881-8004
www.adic.com

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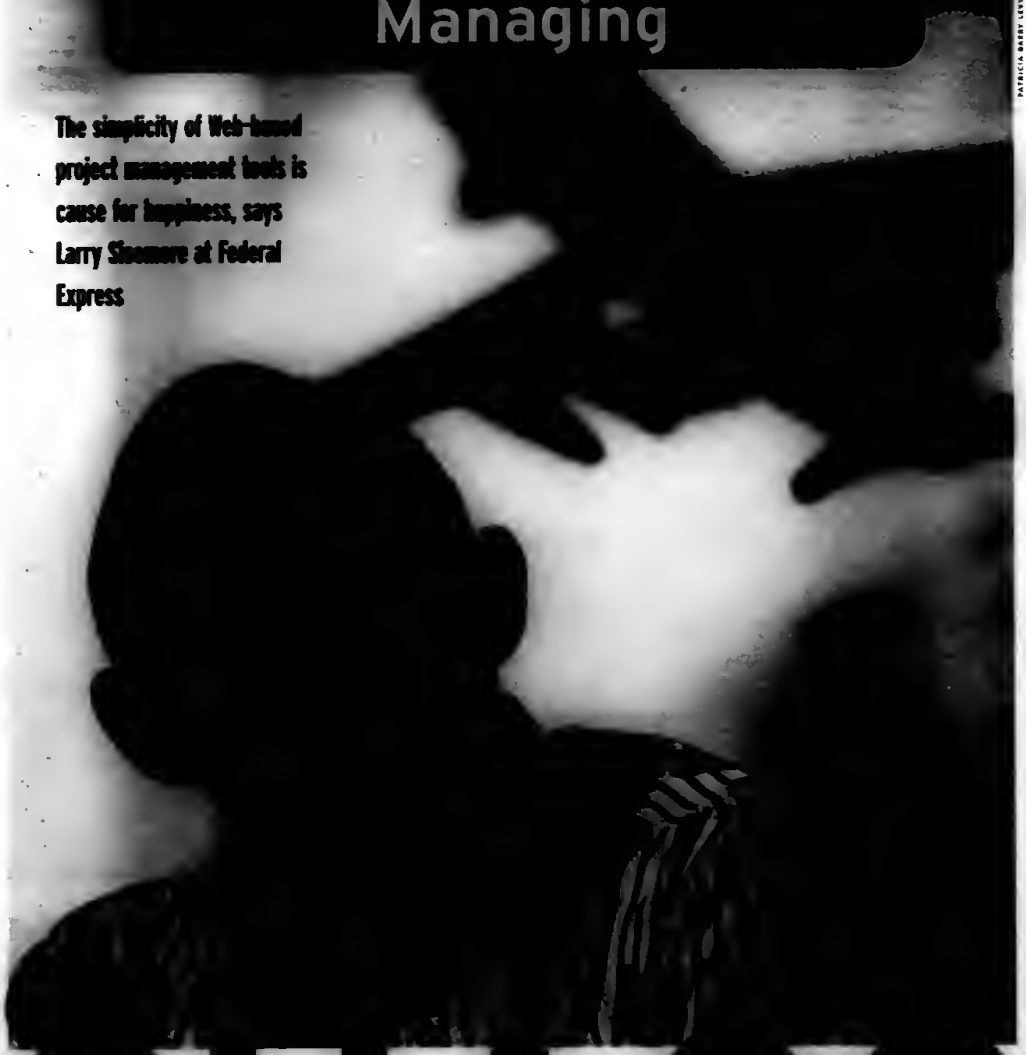
Managing

The simplicity of Web-based project management tools is cause for happiness, says Larry Sloomare at Federal Express



PATRICIA BARRY LEVY

CHAOS

Emerging Web tools could put the management in project management

By Kathleen Melymuka

IT project management is pretty much an oxymoron.

Just ask Dave Banko how he used to track time and progress on projects. "We didn't," says the project manager at Pentamation Enterprises Inc. in Bethlehem, Pa., a maker of administrative software. "We made up project plans for customers and never did anything after that. We used paper time charts."

Banko is not unusual.

Project managers say really managing projects is almost impossible. Current client/server tools are hard to learn and complicated to use, they say. Many are not well-integrated and perform erratically. As a result, team members ignore them, leaving project managers guessing about project status.

Executives resist them, fail to become engaged and thereby increase the risk of project failure.

No wonder 84% of information technology projects come in late, over budget or not at all, according to The Standish Group International Inc. in Dennis, Mass., which has an ongoing "Chaos" study looking at thousands of IT projects through surveys, focus groups and interviews.

The Web may begin to change that by putting everyone on the same page — literally.

The first wave of Web-based project management tools focuses on time and progress reporting, and early adopters say they are well-integrated, reliable and easy to use. Team members use any PC anywhere to report progress on an individual project's Web pages. The tools compile that data into up-to-the-minute snapshots on the project manager's Web page.

There's also an executive Web page with a high-level view of all current projects.

Vendors are working to bring additional tools to the Web, including project planning and corporate project portfolio management, but the first modules already address a key problem.

"One of the main reasons projects fail is communication," says Jim Johnson, chairman of The Standish Group. "The Web is a great communicator. It offers a lot of promise."

Even so, it will take more than tools to turn project management around. "A fool with a tool is still a fool," Johnson says. "The Web doesn't change that."

But users believe that by tightening communication and providing a common view of multiple projects, the Web may provide the backbone for the formal, disciplined project management that has eluded IT.

LOOKING BACKWARD

Project management as we know it is an exercise in looking backward, says Tom Jakab, program manager at Medrad Inc., a Pittsburgh-based supplier of radiological equipment. "People manage projects like they're sitting in a rowboat: facing where they've been, but they can't see where they're headed."

That's because it's been very difficult to update projects in a timely way. For example, David Chard, systems integration manager at British Aerospace in Farnborough, England, is implementing enterprise resource planning software.

"At the moment, we have a monthly reporting cycle, and the cycle can be very onerous," he says. "By the time we have all the reports together, it could be six to seven weeks after problems first arose."

Some project managers don't use electronic tools at all. "We issue a paper turnaround document, and people mark it up with a pen and return it," says Steve Toll, a schedule coordinator at the diesel division of General Motors Canada in London, Ontario. "Then that is incorporated into the schedule, updated and reissued on paper."

LOOKING AHEAD

The first Web-based project management tools — from vendors including Primavera Systems Inc. in Bala Cynwyd, Pa.; ABT Corp. in New York; PlanView Inc. in Austin, Texas; Welcom in Houston; Business Engine Software Corp. in San Francisco; and NexPrise Inc. in Santa Clara, Calif. — let project managers see a project's status today in order to plan for tomorrow.

That's made a dramatic difference to Banko, who's used Primavera's Webster since February. Previously, project team members filled out paper time sheets that were later typed into a database, then exported to a different database to estimate progress against the project plan.

To get a visual representation, the information would have to be reentered into a separate graphics program. The complexity of time reporting often tied up the system, keeping project managers out.

With Webster, each team member has a personal Web page with a list of activities and a weekly chart indicating what he's expected to accomplish.

"It works as a 'to do' list from the project manager to the team members," Banko explains. "They can see what they're scheduled to work on. The 'hours-to-go' field can be updated to tell the project manager whether they're ahead or behind, and adjustments can be made in the project plan accordingly.

"This enables real-time information with one clean database," Banko says. "Project managers get accurate information, and it's a lot less work for them to maintain."

VIEW FROM THE TOP

Web tools also offer an overview of all projects, something that's much more difficult to achieve in a client/server environment, where each project has its own discrete file, says Geoff Ables, a project manager at First Union Corp. in Charlotte, N.C. "It's never going to be easy, but the Web makes it a lot easier," he says.

With PlanView's Reporter, Ables can use the overview to improve project management processes. "We can summarize results and look for patterns," he explains. "If we see that Step 3 is a bottleneck in 90% of projects, we can resolve that."

The simplicity of Web-based tools engages executives as well, and because the Standish study has found that executive backing is a prime indicator of project success, keeping them involved is critical.

"If a managing director feels he has to go to class for three days to use tools, forget it," says Larry Sisemore, manager of process and technology integration in the IT division of Federal Express Corp. "But I can have them click to the Web site and it's already organized for them. They can break it down and get these beautiful graphic dashboards of information on each project."

RANK-AND-FILE RESPONSE

To achieve any benefits, team members have to use the tools, of course, and they're not always willing. "They tell us that it takes too much time to learn a new tool," Sisemore says.

That's because many client/server tools require team members to learn a complex project-planning module to report time and progress even though they never do any project planning.

Web tools simply separate the two functions. As a result, Web tools take minutes, not hours, to learn. "That turns everyone's thought process around," Sisemore explains. "Then we say it's Web-based, and that's exciting to any wirehead. They'll try it, and it's so simple they accept it."

The tools offer users more than simplicity, Ables says. They can improve the quality of their lives.

"Before, I might schedule Bob for 10 hours on this project," he says. "Now I can see Bob already has 50 hours of work scheduled [on a different project]. Individual schedules are going to be a lot less crazy."

KNOCKING DOWN BOUNDARIES

Using the Web makes distance less of an issue. That's important for Banko, whose projects include remote trainers and installation teams.

"They may not be in the office for three or four weeks straight, but they can dial in and directly access the Web page," he says. "It keeps it all in real time, even with remote customers."

The tools also facilitate complex project partnerships. British Aerospace, for example, has multiple-site projects with outside partners including overseas companies and suppliers. "Web-based gives us the ability to pull all that together in a timely manner," Chard explains.

But you don't have to be virtual. "Internally, as an intranet tool, it's a whole lot easier to maintain than anything client/server-related," Banko explains.

TIME WILL TELL

Despite users' enthusiasm, Johnson says the biggest challenges are still ahead for Web tools. "We've seen great success with them in smaller projects, but smaller projects generally succeed better than bigger ones," he notes. Can the Web turn big projects around? "The jury is still out," he says. "It's too early. But it does offer a lot of promise."

However promising Web tools may be, Ables cautions that the bottom line in project management is people. "Tools help, but to manage a project well you need a corporate culture that fosters teamwork and quality and thinking through projects from beginning to end," he says. "If you don't have the culture, the tools won't do any good."□

Melymuka is Computerworld's senior editor, management.

Market players

Vendors that make Web-based project management tools:

Primavera Systems Inc.
Bala Cynwyd, Pa.
www.primavera.com

ABT Corp.
New York
www.abtcorp.com

PlanView Inc.
Austin, Texas
www.planview.com

Welcom
Houston
www.welcom.com

Business Engine Software Corp.
San Francisco
www.businessengine.com

NexPrise Inc.
Santa Clara, Calif.

Web project management pros and cons

PROS

- Easy to learn
- Easy to use
- Attractive to wireheads
- Attractive to executives
- Access through any PC anywhere
- Facilitates communication, timely project updates
- No client administration
- No client maintenance
- Provides high-level, multiproject views
- Simplifies resource planning

CONS

- Version 1.0 tools; no track record
- Scalability unknown

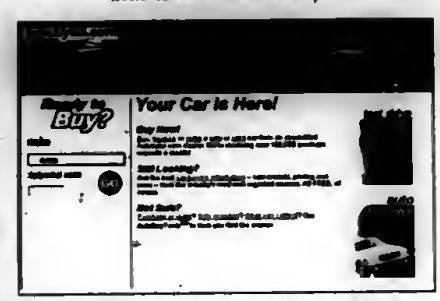
THE PRICE OF Web Pizzazz

BY DEBORAH RADCLIFF

The business side wants a Web site with punch. But fielding vague ideas and finding people to do the work is leaving the IT side punch-drunk

SIX MONTHS AGO, Mr. Jelly Belly, a red and friendly fellow, couldn't bat an eye. Today, he twirls and leaps like a jumping bean as he guides visitors through the Web site of Fairfield, Calif., candy maker Herman Goelitz Inc.

The Jelly Belly site (*www.jellybelly.com*) recently got a facelift. The old site merely published company information and directions to the Goelitz factory tour.



Autobytel's IT department takes a "production approach" to make fast-paced changes on its Web site

Now it hooks visitors into an interactive marketing survey that offers daily candy giveaways to the first 500 who fill out a questionnaire. It also includes a new online retail store, which marketing manager Rob Muller hopes will become a direct-revenue source.

"One thing marketing and IS agree on is, we should keep the site easy to navigate," Muller says. "But people are looking more for dancing Jelly Bellys right now, so we're going to continue to look toward simple animations and improvements."

When it comes to electronic business, there's no such thing as simple. Especially when you're talking about trendy Web fads such as free E-mail, chat rooms, surveys, animation and other marketing gimmicks.

As these cool new Web ideas come down the pike, information technology managers are feeling pinched by staffing shortages and fuzzy project focus.

"E-business and the technology behind it changes so very fast that it's difficult to keep up with," explains David Perl, CEO of Pro-Soft I-Net Solutions Inc., an $8.8 million electronic-business training organization in Santa Ana, Calif.

Jelly Belly's recent makeover caused its six-person IT department — already busy with year 2000 and managing a 400-desktop, coast-to-coast wide-area network — considerable consternation. It took nearly a year to develop the back-end database, middleware and scalable storage to manage the information gleaned from marketing surveys. The actual Web design, says information systems manager Greg Streeter, had to be farmed out.

"It's real hard to get nontechnical people to pinpoint what they're looking for, especially when they say, 'Just give me a site that's going to be fun,' " Streeter says. "And we're never given enough time to do projects like these."

Businesses also are mixing up Web offerings in such a fashion that it leaves IT managers wondering what the core function of their Web sites really is, according to Jim Balderston, a senior analyst at Zona Research Inc. in Redwood City, Calif.

Americanexpress.com, for example, now peddles free E-mail. Barnesandnoble.com and other online booksellers host a maze of chat rooms and bulletin boards. And Autobytel.com, which pioneered car shopping online in 1995, started selling Visa cards from its Web site in April.

"Businesses are in aggregate mode right now, trying to accumulate as much [content] information as possible at one location to gain better control over their audience," says Eric Schaefer, director of marketing at Autobytel.com in Irvine, Calif. "Marketing guys like me drive the IS guys crazy."

Like Jelly Belly's free candy giveaway, the purpose of Autobytel.com's Visa rewards program is to lure customers back. Consumers earn points — redeemable for their next car — when they make purchases through Autobytel.com's partner, First USA Visa Card. In a complementary program dubbed Mobilist Rewards, shoppers also earn bonus points for shopping with one of six partner proprietors, such as 1-800-Flowers.

Sooner or later, car buyers will need another vehicle. And when they do, Schaefer bets they'll return to casb in those points.

Even with this spin, the rewards project strayed far enough from Autobytel.com's core competency of matching car buyers with sellers that the IT department was forced to reorganize itself and break out the project as a separate Web entity, says Doug Nottage, lead Web developer.

Similar to Jelly Belly, staffing shortages forced Autobytel to outsource some of the work, in particular the transactional processing end. And IT departments at both Autobytel and Jelly Belly, anticipating ongoing "significant changes" to their Internet campaigns, have been hiring.

"Finding qualified people is the toughest challenge we have in the next year, especially when year 2000 is pulling our resources," Streeter explains.

Because of its Internet focus, Autobytel benefits from a much stronger Web staff. Between back-end support and front-end developers, the staff totals about 20. Still, to accommodate fast-paced project rollouts, Autobytel reorganized into project teams that take a "production approach" to Web development. "These teams then split into concept people, code crankers and so on," Nottage says.

The teams have learned to speak up when approached with promising Web ideas.

"A lot of managers will come and say, 'While you're at it, could you figure out a way to do this project, too?' So we ask management to prioritize," he says.

In addition to prioritizing, Streeter urges IT managers to nudge business units to better focus their ideas.

"Ask, 'What exactly will we deliver to you?' I call it 'managed expectations' — which really means having a well-defined project scope," he says.

The revamped Jelly Belly Web site features an interactive marketing survey, candy giveaways and a retail store

It also helps to guide marketing managers in separating hype from reality, Balderston says. "Don't just do something to make sure you're on the current bandwagon. Ask, 'Where is the trend going and what's the value proposition to our organization?' " □

Radcliff is a freelance writer in Santa Rosa, Calif.

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JIM CHAMPY

DIRECT SALES OR ELECTRONIC CHANNELS? GIVE THE CUSTOMER A CHOICE

It's an enduring debate: Can electronic channels replace a sales force?

Back in the 1970s, when John Diebold wrote his book *Automation*, it was generally assumed that technology would drastically reduce workforces. But that really hasn't happened. With few exceptions, as a company grows, so does its workforce, though often with new job skills.

The debate came back to me recently when Merrill Lynch & Co. announced that, in a four-month trial beginning this month, it would make its research reports available for free over the Internet.

Some analysts called the move a reversal of Merrill Lynch's position on electronic commerce. Until now, Merrill Lynch had called do-it-yourself stock trading the financial equivalent of bungee jumping. Retail investors needed trained "advisers," the function of its legion of brokers. Merrill Lynch had never really competed directly with the likes of ETrade or Fidelity Investments.

The "official" Merrill Lynch position was that the research reports were more like a marketing ploy. Still, one senior strategy executive told *The Wall Street Journal*: "We are now beginning to understand that [the Internet] is much more than a convenient service. It's a core part of the way we communicate with clients and a core part of our business strategy."

HOW MUCH VALUE?

The key question is: How much customer value do either human or electronic channels provide customers, and in what segments? History provides contradictory lessons: More than a decade ago, IBM decided to shut down its "blue suit" direct sales channel for PCs in favor of independent resellers — and promptly lost control of that market. And now, ironically, it seems the last humans will be squeezed out of the PC sales process by Michael Dell's Internet channel.

Maybe the most important strategy question for Merrill Lynch will be how it manages the electronic links from its inevitable electronic-trade channel with its other services and offerings. For example, when the "free" research debuts, will there be a hot link to a live "broker?"

I first encountered this kind of question several years ago at a large life insurance company. It too had thousands of agents responsible for customer acquisition and retention. But it was becoming clear that it was possible to sell those products directly to customers over the phone at a much lower cost.

In fact, this insurance company's competitors were doing just that and beating it badly.

It was the same Merrill Lynch question: What to do with the thousands of brokers if technology could somehow do their job? And would the customer relationships survive without them? In Merrill Lynch's case, there is a role for brokers and technology. But there may be fewer brokers, and those remaining will be specialists in certain financial products or customer segments, such as retirees.

This is the key point: No market is monolithic. There are different kinds of customers whose needs can change throughout a lifetime.

That was confirmed by an insightful study on the future of money released in September last year by The Doblin Group, a Chicago consulting firm. It noted three forces transforming the financial industry:

- Investment vehicles and access to financial information required to buy and sell securities are now widely available — thanks to CNN, Fidelity and Intuit Inc.
- Individuals now bear greater responsibility for personal finances because of the demise of the "lifetime job" and the corporate pension.
- Barriers between buyers and sellers are eroding to permit more direct means of exchange, thanks to laissez-faire government policies such as the demise of the Glass Steigal Act that has separated commercial and investment banks.

Doblin also segmented personal use of money into tracking and recording, saving and investing, and spending. All this cries out for a varied set of sales channels and informational services from financial institutions.

IT'S TOOLS AND PEOPLE

Perhaps the best example of how all these factors are beginning to work together can be seen in Fidelity's storefront operations. It may seem crazy to set up physical facilities in this electronic age. But the setup is a potent mix of technology, specialists and generalists. People strolling in the door first encounter the generalists. If a question requires a certain expertise, they go to the specialist. If self-service technology can do the job and the customers are comfortable with it, they walk to a terminal and get a nanosecond response. But the customers make the choice.

It's a good rule for Merrill Lynch and all other potential financial supermarkets: Design the business so that it isn't about choosing between people and technology — it's about giving customers the choice. □

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His Internet address is jimChampy@psn.net. His newspaper columns are syndicated by Tribune Media Services.

f.y.i.

CIOs LOOK TO UPGRADE THE BASICS

When it comes to software upgrades, CIOs are willing to spend where the bottom-line impact is clearest.

About one in four — 26% — are willing to upgrade core functions such as manufacturing and customer service, according to a survey by RHI Consulting Inc. in Menlo Park, Calif. Sales and marketing rank second at 21%.

"Most companies will direct improvements first to core functions to achieve immediate, bottom-line results," says Greg Scileppi, executive director of RHI Consulting.

"Manufacturing firms, for example, are upgrading software and hardware used for enterprise resource planning and inventory management," he says. "In addition, businesses of all kinds are taking advantage of advancements in revenue management software and relational databases for better customer tracking."

STRESSING THE BASICS

Which one of the following functions in your organization would benefit most from upgrading information technology resources?

26%	Core manufacturing/service function
21%	Sales and marketing
19%	Accounting
17%	Administration
7%	Research and development
3%	Training on IT
6%	Other
1%	Don't know/No answer

The survey, by RHI Consulting Inc., Menlo Park, Calif., included responses from 1,400 CIOs in the U.S. at companies with more than 100 employees.

In Depth

What not to do when competing on Internet time

Competing on Internet Time: Lessons From Netscape and its Battle With Microsoft

By Michael A. Cusumano and David B. Yoffie

1998, The Free Press, New York

Hardcover; 288 pages; $26

An excerpt from the book Microsoft wants to get its hands on

Michael A. Cusumano and David B. Yoffie find themselves at the center of a maelstrom. Microsoft Corp. lawyers believe tapes and documents from the authors' recently published book, *Competing on Internet Time: Lessons From Netscape and its Battle With Microsoft*, could "eviscerate" the U.S. Department of Justice's antitrust suit against the software company.

Microsoft went to court to gain access to those documents. It lost.

Marc Andreessen admitted Netscape tried "to take all products into all markets."

Recently, the company appealed the decision. In interviews, Microsoft's appellate brief claims, "Netscape personnel candidly concede that many of Netscape's problems are of its own creation, and not the result of any allegedly anticompetitive actions taken by Microsoft." Whatever the outcome of the appeal, the time seems right to publish an excerpt from *Competing on Internet Time*.

Internet time, page 66

Internet time

CONTINUED FROM PAGE 65

By 1998, the browser wars had taken a serious toll on Netscape Communications Corp. Some of the damage, of course, was inevitable. Microsoft is one of the toughest competitors in the world, with one of the strongest competitive positions in the history of information technology.

But both Netscape and Microsoft have made mistakes. The Internet is a new medium, and companies have to experiment.

When Microsoft makes mistakes, however, it has certain luxuries not available to most companies.

As Steve Ballmer told us, "When we make mistakes, you won't see it in our revenue for three or four years!" For most companies competing on Internet time, mistakes become evident in days or weeks.

The principals in this book suggest effective ways to compete in fast-changing markets. It is also important to suggest a few lessons from the Netscape and Microsoft experiences about what companies should not do when trying to compete on Internet time.

DON'T DEPEND ON THE REVOLUTION COMING TOMORROW

For years, the name "Netscape" was virtually synonymous with the impending-IT revolution. But revolutions do not happen overnight in information technology, even when the technology is the Internet.

Early adopters become excited by new technologies and often assume that the rest of the world will follow their lead. They forget there are roughly 300 million operating PCs in the world today.

If you believe the revolution is coming tomorrow, you can fall into several traps. One, as [Netscape co-founder] Marc Andreessen admitted, is creating a strategy "to take all products into all markets." Netscape is relatively focused today. In the earlier years, however, it tried to offer products in every important Internet and intranet client and server category and to cover every possible computing platform, regardless of the revenue potential.

A second trap is doing "rocket science" to accelerate solutions and solve hard technical problems. Despite Andreessen's deep concern that Netscape should avoid overly complex projects, the demands of the revolution led the engineers down several technical dead ends.

DON'T UNDERESTIMATE THE IMPORTANCE OF QUALITY AND PROCESS

Preoccupation with speed and flexibility can lead companies to trade off quality and process. Companies need to keep these goals front and center, even when they are racing to introduce new products. This is especially true when trying to reach enterprise customers. No product will gain acceptance in the mainstream unless it is reliable and supported.

It is difficult to build and support new products when engineers can change designs at the last minute.

There is little time left for testing, documentation or design rework. But to live on Internet time, companies must cultivate contradictory skills: They have to be flexible in design and promote constant innovation, but still retain control over schedules and quality.

Netscape's engineers wrote code very fast and created numerous innovative features. Early on, the company skimped on in-house testing in order to rush a flurry of beta versions of Navigator out the door.

Telling a much larger, more powerful enemy that you are going to kill him is likely to produce a lethal response.

To its credit, Netscape did not let these weaknesses go without addressing them. In October 1997, Netscape executives made customer satisfaction a top priority. By 1998, these efforts were paying off: An independent survey found Netscape's server software outperformed Microsoft on quality, reliability and support.

DON'T MOON THE GIANT

How can you prevent the dominant player from responding to a potential threat to its core business? The first answer, in the words of Netscape's former head of OEM sales, Ram Shriram, is that you don't "moon the giant." Telling the (much larger, more powerful) enemy that you are going to kill him is likely to have one predictable outcome: a lethal response.

The better approach is to take a page from Greek mythology and learn from the lessons of the Trojan horse. Netscape did a brilliant job of building a Trojan horse (Navigator), getting inside the walls (80-plus percent market share) and creating the foundation for a new platform that might ultimately have replaced Windows as the universal user interface.

With an extra year or two, Navigator might have become so deeply entrenched that it would have been extraordinarily difficult to displace.

Yet Netscape management got carried away. Repeatedly telling the world that Microsoft's operating system would become nothing more than "a mundane collection of not entirely debugged device drivers" got Bill Gates' attention.

And once the enemy was awake, the soldiers in the horse became vulnerable.

DON'T BE AFRAID OF CANNIBALIZATION

As Netscape grew bigger, it, like Microsoft, became weighed down by its history, revenue streams and installed base. Netscape's biggest burden was its pricing model; by the end of 1996, revenues from "not free" browsers represented the lion's share of Netscape's sales and profits.

Just as Netscape had frozen competitors with its initial "free, but not free" policy, Microsoft's strategy of offering Internet Explorer free froze Netscape. Microsoft's strategy worked: It took the loss of 30 market-share points before Netscape thawed.

The only way to fight such an attack is to cannibalize your own business. By 1995, Microsoft had made public commitments to an array of online strategies. Rather than allow these commitments to slow Microsoft down, Gates did everything and anything to get share for Internet Explorer. That included transferring control of some proprietary software to an industry group (ActiveX), abandoning other investments (Blackbird), even undermining Microsoft Network. In the long run, it was worth the price.

DON'T BE TOO GREEDY

Finally, Netscape and Microsoft both have been guilty of simply being too greedy. Netscape was too greedy for cash, and Microsoft was too greedy for market share.

In Netscape's case, there was excessive enthusiasm for extracting cash from every relationship and for pleasing Wall Street. Within months of launching Navigator, Netscape managers took every opportunity to raise revenues and profits. Even worse, they raised revenue and profit expectations. In the rush to go public and demonstrate their success, they were willing to lose market share, delay important strategic decisions (such as reducing the price of the browser) and weaken potentially valuable long-term relationships.

Microsoft's near-monopoly position in operating systems gave it luxuries that few firms could afford. Microsoft was rarely greedy for cash. In fact, financial considerations never seemed to dominate decision making.

But Gates and company were too greedy and too tough when it came to winning market share in the browser wars. In winner-take-all environments, firms can gain so much market power and market share that they have special obligations under antitrust laws. It is perfectly legal to win a near-monopoly through good business practices.

But once you have a dominant position, special rules apply. □

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IT Careers

THOSE FLIPPIN' RECRUITERS!

Think your IT staff is safe from corporate raiders? Think again! A controversial recruiting technique could be targeting your company's Web site

By Steve Alexander

As recruiters scramble to find scarce skills in the information technology job market, controversial business practices such as raiding have gotten increased attention.

Now, with the Internet becoming a heated recruiting battleground, a new practice called "flipping" Web pages has renewed the debate on where recruiting crosses the line into unethical behavior.

At its simplest, flipping uncovers employee E-mail addresses through links to corporate Web pages. At its most complex, flipping provides unauthorized entry into a company's intranet to view proprietary organization charts and personnel lists.

Some recruiters see flipping as merely using new Web capabilities. Others have grave concerns about it. Either way, flipping clearly underscores the need for IT professionals to re-examine whether their companies are vulnerable to intrusive Web techniques.

It appears flipping isn't yet a widespread recruiting practice. Many IT professionals say they believe that no more than 10% of retained recruiters use it and that most corporate IT recruiters don't. But sign up for your nearest technical recruiting conference, and odds are good that you'll get a full-blown demonstration of how to flip.

One recruiter who both teaches the technique and uses flipping herself as a recruiting tool is Tracey Claybrooke, president of Claybrooke & Associates Inc. in Tampa, Fla. In addition to flipping, Claybrooke uses more conventional Web techniques, such as gathering E-mail addresses of potential job candidates by searching Internet user groups and mailing lists.

Based on that collective information, she offers a "research service" to IT organizations seeking job candidates and also gives seminars on Internet search techniques.

"I can generate a beautiful [company] organizational chart using these techniques," Claybrooke says. She stays in contact with people she locates via a monthly E-mail newsletter.

Claybrooke says flipping works this way: "You take a Web site, whether it belongs to a company, a user group, an association or whatever and place it in the search engine HotBot. Then you request to see every URL that is linked to that Web page. Folks who are very proud of their company create hyperlinks from a personal Web page to the company page, and that means I am able to find that person and what he or she does."

You can speed up the process by searching for hyperlinks with words such as *resume*, *directory* or *programmer*. In addition to corporate Web sites, Claybrooke says she finds that sites devoted to schools, "Dilbert" and *Star Trek* are rich sources of links to personal Web pages for IT professionals.

Those flippin' recruiters! page 69

A 'FLIPPING' EXPERIENCE

Computer Sciences Corp. (CSC) knows how easy it is to be the victim of Web-site flipping. The El Segundo, Calif., company's experience illustrates how sensitive the topic is to recruiters and corporations alike.

CSC, which doesn't endorse flipping, claims the incident happened during a public seminar given in May by Tracey Claybrooke at Claybrooke & Associates. It was "done without our knowledge or permission," says CSC spokesman Michael Dickerson.

Claybrooke says she flipped CSC's Web site "to see what was available" and got into its intranet, where she found an employee directory. "If I had been a recruiter raiding them, that would have been a . . . gold mine," she says. When Claybrooke told the company of her success, Dickerson says, "CSC immediately put in place protections to ensure that our Web site could no longer be flipped."

In July, CSC hired Claybrooke after she sent the company the flipped Web page information in a proposal touting her services. "I got a call the day after they got the proposal," she said.

Dickerson says Claybrooke was hired for a one-day "Internet strategy" seminar to teach CSC employees how to navigate the Web. "Flipping was not discussed in that seminar or with us at any other time," he insists. "She is not currently working for or representing CSC in any way. CSC does not flip anyone's Web site, [and] we never asked anyone to do so on our behalf."

CSC didn't respond to a request to comment on whether it believes flipping is ethical. – *Steve Alexander*

THE BEST

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THOSE FLIPPIN' RECRUITERS!

CONTINUED FROM PAGE 67

But the bigger payoff comes from flipping her way into a company's intranet. "Sometimes, if a company's firewall is not secure enough, when I flip a Web page I can gain direct access to the company's intranet. I've had it happen where I just searched for "employee directory," and it came up. Some people say this is hacking, but I don't think it is. I'm just looking for links to the company's Web page, not breaking in," Claybrooke says.

The reaction of IT recruiters to the "flipping" technique ranges from outrage to acceptance.

"I don't think that's the way to do business," says Carol McLysaght, a personnel counselor who hires IT professionals for Wm. Wrigley Jr. Co., the Chicago-based chewing gum manufacturer. "That's like stealing a company's information. It's kind of like saying if I leave my wallet on the photocopying machine at the library, someone else can say it's theirs and use it. I just know that if she were stealing my qualified people that I worked hard to recruit and retain, I'd have a hard time with it."

The reaction of recruiters to flipping ranges from outrage to acceptance.

Natalie Odell agrees. "A lot of things are just lying there on the Internet, but that does not mean it's right to take them," says Odell, a staffing manager who hires IT professionals for Achieve Healthcare Information Systems, a medical software developer in Eden Prairie, Minn. "I hope this is not the wave of the future, because it perpetuates the bad image people have of recruitment and recruiters. We've worked so hard to legitimize our field, and this puts us three steps back."

But, Odell adds, "I think it's very likely that people will do this, given the shortage of IS professionals."

Bill Hickmott doesn't share that concern. If he hires a search firm to help fill an IT job, "those companies are going to use these techniques, I'm sure. How else are the search firms going to come up with the names?" says Hickmott, a human resources professional who does technical professional staffing at Liberty Mutual Information Systems in Portsmouth, N.H., the IT arm of Boston-based Liberty Mutual Insurance Group.

"So what's the difference whether you pull the trigger yourself or hire somebody else to do it?" Hickmott asks. "It probably was not the intent of those employers to publish that information. But unless the companies do something to restrict access, it's certainly not illegal to use the information. And it's not really unethical."

The extent to which recruiters use flipping is hard to verify. Claybrooke says, "About 10% of search firms do what we do."

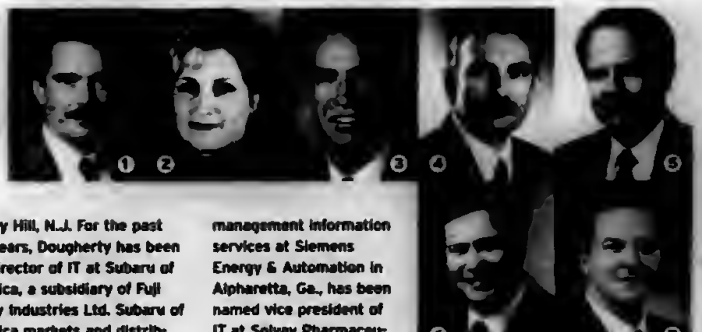
McLysaght says, "I don't know any of the recruiters I'm using who are doing that. And in the last four months, I've probably gone through 20 recruiting firms."

Most corporate recruiters don't use Internet-based tactics such as flipping, partly because they aren't familiar with them, says Peter Weddle of Old Greenwich, Conn., who publishes an online recruiting newsletter. "There's also a certain code among corporate HR people. They don't want to have that done to them, so they don't do it to someone else."

It's also hard to say how widespread flipping is because it leaves no traces. Adds Weddle, "My suspicion is that even if it has happened to corporations, they don't know it." □

Alexander is a freelance writer in Edina, Minn.

EXECUTIVE TRACK



① DAVID B. BROWN

② ELAINE R. DAVIS

③ ROBERT DOUGHERTY

④ RON MERLINO

⑤ JOHN F. MURPHY

⑥ THOMAS A. PED

⑦ DAVID RIPS

David B. Brown has been promoted to director of microcomputing services, information systems, at Rich Products Corp., where he was formerly manager of application development technologies. Rich Products, in Buffalo, N.Y., is the U.S.'s largest family-owned frozen food manufacturer.

Elaine R. Davis has been named vice president and CIO at Wisconsin Electric Power Co. in Milwaukee, an investor-owned utility. Prior to the appointment, Davis was the chief information services director at Kaiser Foundation Health Plan in San Francisco.

Robert Dougherty has been named vice president of information technology and CIO at Subaru of America Inc. in Cherry Hill, N.J. For the past five years, Dougherty has been the director of IT at Subaru of America, a subsidiary of Fuji Heavy Industries Ltd. Subaru of America markets and distributes Subaru vehicles, parts and accessories.

Ron Merlino has been appointed to the newly created position of chief technology officer at PCS Health Systems Inc. in Scottsdale, Ariz., where he was previously the vice president of enterprise services. PCS provides managed pharmaceutical-related programs and services. Prior to joining PCS, Merlino worked in corporate communications in a technical capacity at US West Inc. in Denver.

John F. Murphy, formerly vice president of corporate management information services at Siemens Energy & Automation in Alpharetta, Ga., has been named vice president of IT at Solvay Pharmaceuticals Inc. in Marietta, Ga. Solvay Pharmaceuticals is a research-based pharmaceutical company, active in the areas of women's health, gastroenterology and mental health.

Thomas A. Ped has been named vice president of IT and CIO at Weyerhauser Co. in Tacoma, Wash. Ped has 30 years of experience at Weyerhauser, where he has managed mills and worked in logistics and sales. Weyerhauser is engaged in the growing and harvesting of timber, the distribution and sale of forest products, construction and development activities.

David Rips has been promoted to the position of senior vice president of strategy and planning, information systems at Sony Pictures Entertainment in Culver City, Calif. Previously, Rips was vice president of Sony Pictures' change management department. Sony Pictures' operations include motion picture production and distribution, television programming and syndication, and other entertainment products services and technologies.

IT CAREERS

Systems Analyst. (Two openings.) Bachelor's degree (or higher) in management information sciences or computer science. Position requires two years experience performing systems analyses in database environment and programming with Paradox ObjectPal. Also requires six months' experience programming with Microsoft Access in Visual Basic Applications (VBA) or Visual Basic (VB) and programming in Microsoft SQL server environment. (Experience may be, but need not be, concurrent.) Duties involve developing properly and facilities management performance applications in database environment by performing systems analyses and programming with Paradox ObjectPal. Will program applications using Microsoft Access in VBA and VB and integrate systems administration and data import functions. Also will program and support DOS file conversions in Microsoft SQL server environment. 40 hrs./wk. 8:30-5:00. Sal. range: $53,000-$63,000/yr. Apply with res. returned to The Georgia Department of Labor, Job Order #GA 6299082, 2943 N. Druid Hills Rd. Atlanta, GA 30329 or the nearest Department of Labor Field Service Office.

Programmer/Analyst sought to participate in the implementation of a Year 2000 Compliance Project which entails programming and testing in COBOL II, in a CICS, DB2, IMS environment. Bachelors or equivalent in Computer Science, Engineering or a related field + 6 months exp as a Programmer/Analyst or 6 months as a Programmer Training, education, or experience must include COBOL, DB2, and CICS. Will accept training at a recognized Computer Training Institute in lieu of experience in the Job Offered or a related occupation. Applicant must be willing to travel to various client sites throughout the U.S. Send 2 resumes to: Case #: 80321, PO Box #: 8998, Boston, MA 02114.

Database Analyst (multiple positions) (varying job sites Forth Worth/Dallas, Metro sites) Oracle Database design, development & administration. Development of packages, procedures and functions in SQL/PLSQL. Creation of Shell Scripts for UNIX. Use of PLC in conjunction with Factory Link. 80,000/yr. 40 hrs/wk Mon-Fri. 8am - 5pm. REQD: Bachelor's Degree in Comp. Sci. math, Engineering or MIS plus 2 yrs exp. in job offered. Apply at the Texas Workforce Commission, Dallas, Texas, or send resume to the Texas Workforce Commission, 1117 Trinity, Room 424T, Austin, Texas 78701. J.O. # TX0811222 "Ad Paid by An Equal Opportunity Employer"

Software engineer,with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 2 years of experience using Oracle Unix, with some experience with Oracle Financial. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer science or physics. $76,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 8043369, to Mr Tom Deboskiy, Manager, Indiana Job Center, 350 N. Fourth Street, Indiana, PA 15701.

Software engineer with 5 years of experience as a s/w engineer or computer professional who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 5 years of experience using Oracle and Unix, with 18 months experience using SQL Forms and SQL Reporterwriter. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in engineering, computer science, physics, mathematics, or in another field of scientific study $70,000/yr. 40 hours/wk. 9:00 am - 5:00 pm. Send resumes, listing job order number 9088534 to Mr Terry Kinney, Manager, Armstrong County Job Center, 1270 N. Water Street, PO Box 759, Kittaning, PA 16201

Software engineer with 2 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, with 2 years of experience using Oracle, Unix, Powerbuilder, SQL Plus, HTML, Webcom SQL, with some experience with Java Script. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Master's degree in one of several limited fields: engineering, mathematics, computer applications or physics. $81,000/yr. 40 hours/wk. 9:00 am - 5:00 pm. Send resumes, listing job order number 2021859, to Mr Duane M. Brentzel, Manager, Office of Employment Security, 569 Sells Lane, Greensburgh, PA 15601

Software engineer with 5 years of experience as a s/w engineer or computer professional, who will develop s/w systems, applying computer science, engineering, and mathematical analysis, requiring supervision of other computer professionals, with 5 years of experience using Data Modeling, Oracle Database Administration, and Unix. Analyzes s/w reqs. and performs testing and user training after development. Extensive travel and frequent relocation. Bachelor's degree in one of several limited fields: engineering, mathematics, computer applications or physics. $84,000/yr. 40 hours/wk., 9:00 am - 5:00 pm. Send resumes, listing job order number 6021690, to Local Office Manager, Mon Valley Job Center, 345 Fifth Avenue, Mckeesport, PA 15132.

Software Engineer – Design develop and maintain software for Wafer/Device testing in client-server environment using C/C++ and IMAGE Design & implement software tools for equipment performance data acquisition & analysis using Shell Scripts, SAS, Perl & Oracle/SQL. Optimize and improve wafer probe tester configurations, process controls & monitors. Perform R&C studies, improve yields and reduce scrap. Install/maintain/archive Operating systems & software for testers & off-line workstations in engineering/manufacturing. Sal $55k/yr. Req. MS in Comp. Sci. or related discipline plus 1 yr exp. in the job described. Resume to: HR Manager, Delphi Delco Electronics Systems, One Corporate Center, PO Box 9005, Kokomo, IN 46904-9005.

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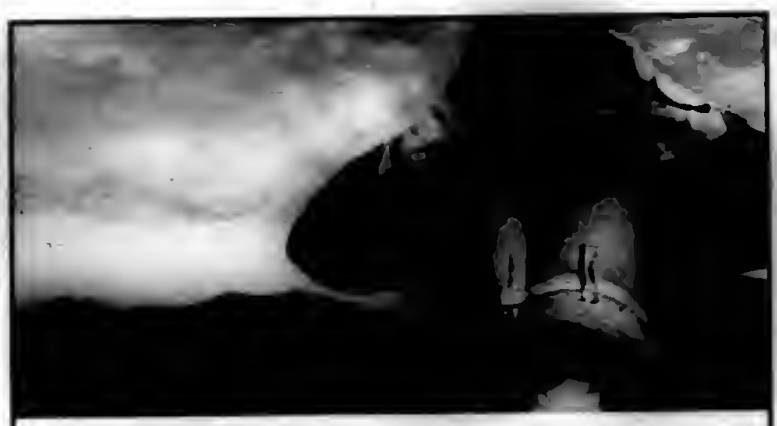

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SKILLS SCOPE
Financial services industry

We're in the money

By Melanie Menagh

With the Dow looking like an arrhythmic EKG, the banking industry held hostage to global crises and insurers reeling from mergers and acquisitions, is this any time for an IT professional to be thinking about jumping into the business of finance?

Three information technologists — from different regions, on various rungs of the corporate ladder and in diverse companies — give a resounding, "You bet!" They say that, despite the current economic roller-coaster ride in the U.S. and around the world, there's still money to be made in an industry desperate for IT expertise at all levels.

These employees stress to varying degrees the importance of knowing the business of finance in general and banking or investments in particular. One person we spoke to has a degree in economics; others have studied physics and computers. In fact, one professional we spoke to remarked that getting an MBA may not be necessary, at least not right away. But they did agree that any IT staffer in a financial institution benefits from training in the field.

GARY HOLDEN
Senior business analyst
Fidelity Institutional Retirement Services Co.
Marlboro, Mass.

Holden came to the finance industry by a circuitous route. One path was science. Holden's passion is for physics, a discipline in which he once worked toward a master's degree. "That background was a tremendous help," he says. "The math skills and the computer skills you picked up were huge. Also, being able to break down a problem — the analytical approach toward problem-solving — has been really important."

Holden uses a combination of off-the-shelf products, among them Oracle, Microsoft Access, Excel and The MathWorks Inc.'s Matlab for numerical analysis. He reports to the president and chief financial officer, as well as to other internal customers at many levels of the company.

One of his jobs has been to determine the profitability of some of Fidelity's top clients. "Basically, I ended up building my own analysis workstation," Holden says. "It's structured so I can do a lot of historical analysis. I can seek out trends. What I can do for one month, I can do for 36." With such analysis, Holden showed that "some of the trends were actually [going] in the opposite direction of what people thought they were. I got a nice bonus for that."

A combination of business and technical prowess has served Holden well in the industry. His advice to those thinking of getting their feet wet in finance: "If you're a systems person, the more you can learn about the business, the better off you're going to be. I saw this job as an alternative to an MBA. It's sort of like an MBA equivalency test."

DAVID CARROLL
IT operations manager
Interpacific Investors Services Inc.
Seattle

Carroll works for a small investment firm of about 175 people, counting off-site sales representatives. He manages the company's Web site, troubleshooting and problem-solving, doing "anything that the rest of the staff doesn't have time or know how to fix," he says.

Recently, he recalls, "we had to buy a bunch of new network products. I had to buy network card adapters, install them and configure the machines. Since we don't have a standard PC, getting the cards working was quite a task." When satellite offices needed someone to help them get started, he advised them on what equipment to buy and prepared some procedures and training materials to help them figure out how to gain access to information.

Carroll says that jack-of-all-trades aspect attracted him to a smaller firm. "I'm more easily recognized for my talents and abilities. It paid off. I was promoted to operations manager in May," he says.

Carroll, who has always been interested in finance, got his degree in economics at the University of Washington in 1994. "Some of my computer knowledge I picked up from my wife, who was working for Intel," Carroll says. "We took computers apart and looked at the insides. A lot of my training has been just trial and error."

CRAIG LINDSEY
Systems analyst II
Hibernia National Bank
New Orleans

The leap from academia to finance came about a year and a half ago for Craig Lindsey. While a computer major at Mississippi State University, he had a student job in IT. He continued in a staff position after graduation but was enticed to head for the Big Easy by a friend from MSU who let him know about openings at Hibernia.

"The money was part of it," Lindsey says of his move into banking. "But mostly it was the technology. This particular bank really seems on top of the tech side; that's what lured me here."

Lindsey's duties include helping to install systems for conversion when Hibernia merges with other banks, overseeing project management and choosing and installing new technologies. "There is a wide range of projects," Lindsey says. "We have 250 branches, with a server at every one, plus lots of back-office servers. I've been able to work on a lot more stuff and [have been able to get] a wide variety of experience."

Working for a larger organization has many advantages, Lindsey says. "There are opportunities here for training and advancement," he says. The financial side also has enabled him to delve into a pet project: "One of my big interests is IT security." Lindsey says. "It's really important at a bank. If we're not tough on security here, we're in deep trouble, so I've been able to see and learn a lot."□

Menagh is a freelance writer in Maple Corner, Vt.

IT CAREERS MIDWEST

SOFTWARE ENGINEER to design, develop, implement, test, maintain and support software systems for banking and financial applications on mainframe computers using: C, COBOL, DCL, ACMS, Rdb/VMS, SQL, embedded SQL and DB2 under the VAX/VMS operating system. Requires Master's degree (or equivalent) to Business Administration, Accounting, Finance, Management Information Systems, or a closely related field, with two years of experience in the job offered or as a Software Consultant. A Bachelor's degree with five years of progressively responsible experience in the field will be considered equivalent to a Master's degree. Extensive paid travel on assignments to various client sites within the U.S. is required. Salary: $60,000 per year. 8 am to 5 pm, M-F. Send resume to: Vaidyanathan Ganesan, President, MEGASYS INC., 4059 Berwick Farm Drive, Duluth, GA 30136. Attn: Job SA

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PROGRAMMER ANALYST (Atlanta, GA) Write, code, test new programs & modify existing programs; determine design of new programs & modifications & plan for optimum program efficiency; interface w/end-users re: operational aspects of programs, troubleshoot problems & clarify output reports & data; maintain system documentation changes, complete project time & related mgmt. reports. B.S. Computer Science or equivalent req'd + 2yrs. exp as programmer analyst Oracle and Developer 2K, PL SQL & C++ programming reqd. 40 hrs/wk., $54,500/yr. OT as needed. Send resume to: Ann Franks, Lanier Worldwide, Inc., 2150 Parklake Drive, N.E., Atlanta, GA 30345.

Software Developers. Multiple Openings. Plan, develop, test and document computer programs for maintenance management software system applying advanced database programming and design techniques and utilizing fourth generation programming languages, C++ language, ORACLE and Microsoft SQL Server to run on computers using Windows and in client/server environment. Requires M.S. to Computer Science. $50K/yr EOE. Resume: Datastream Systems, Inc., HR Dept., Box 200, 50 Datastream Plaza, Greenville, SC 29605.

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SENIOR SOFTWARE ENGINEER to provide on-site consultancy for wireless software projects including system analysis/ design, software/ application programming using object-oriented design, networking with TCP/IP and software engineering techniques in a client/server environment; develop user interface application software using GUI guidelines; evaluate database architecture geometry and provide efficient storage and retrieval algorithms for Oracle database; provide computer user documentation for complete software development life cycle. Require M.S. in Computer Science with demonstrated ability to perform described duties upon interview. M.S. coursework must include Object-Oriented Design, Database Theory, Software Engineering, GUI Design, Analysis of Algorithms and Networking. Salary: $62,000 per year. 8:30 am to 5 pm, M-F. Send resume to: R.C. Blackberg, Jr., Director, Vital Technologies Group, Inc., 2888 West Lake Mary Blvd., Lake Mary, FL 32746.

Systems Analyst needed by Dvlpmt Co. in Manhattan. Must have 4 years experience. Respond to: HR Dept, JASB of New York Corp, 30 Rockefeller Plaza, Ste 1929, New York, NY 10020.

Communications Analyst. Plan & design voice & data telecom. sys & networks (Lan & Wan). Provide technical support in relation to oper sys, software & networks (Novell NT, Unix, Apple, IBM, DEC VAX). Protocols used: TCP/IP, IPX/SPX, Appletalk, Decnet, SNA. Cisco IOS for routers (enterprise ver) & switches Internetwork Management Sys. BS comp sci or eng. 2 yr exp. Programmer, Programmer/Analyst or Sys Analyst w/networking & design of sub sys. 53K up depending on exp. Resume to: P Schenck, BellSouth, Bax GP, 59 Executive Pk. S. Rm. 170, Atlanta GA 30329

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Client Manager wanted by Computer Consulting Services Co. in Wayne, PA. Must have Bach in Engg or Comp Sci & 2 yrs exp managing complex data migration projects using SAP data conversion tools. Respond to: HR Dept, Annance Consulting, Inc, 530 E. Swedesford Rd, #102, Wayne, PA 19087.

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SOFTWARE ENGINEER CONSULTANT needed by IT Co. in Union, NJ. Must have 3 yrs exp dsgng & dvlpg client/ server applics using Visual Basic 5.0 as GUI & Sybase 11.0 as server. Exp in Finance sector would be a plus. BE in Electronics req'd. Respond to: Patel Consultants Corp, 1525 Maxie Ave, Union, NJ 07083.

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Programmer/Analyst needed for software development and consulting firm located in St. Louis, Missouri. Job duties include Analyze, design, develop, and and implement computer software for both mainframe and client server applications. Evaluate user requests for new or modified programs. For mainframe applications use DB2, CICS, and COBOL. For client server applications use Sybase and Powerbuilder. Applicant must have B.S. degree in Computer Science. Applicant must also have 1 yr. exp. in the job duties described above or in any computer related occupation which includes 1 yr. exp. designing and developing computer applications for both mainframe and client server applications with a minimum of 6 mos. with COBOL, CICS, DB2, Sybase and Powerbuilder. 40hrs/wk, 8:00 am - 5:00 pm, Mon-Fri, $47,000/yr. Send resume & cover letter to: Mrs. J. Gaston, Ref#: 123792, Division of Employment Security, 13131 New Halls Ferry Rd., Florissant, MO 63033.

Programmer Analyst: 40 hrs/wk, 8:30 a.m. - 5:00 p.m., M-F, $61,000 per year. Design, develop and implement software applications for management information systems, testing and documentation of software creation, modification, enhancement, and testing source programs; Windows 95 NT environment, PowerBuilder 3.0/4.0/5.0;3.x MS-DOS 6.22, Informix 7.1, MS-SQL Server 6.0 Pascal, C. Requirements: Bachelor of Science in Electronic Engineering and two years in job offered or two years as Programmer Analyst or Software Consultant. Experience must include two years in PowerBuilder development. Must have proof of legal authority to work permanently in the U.S. Send resumes to Decision Consultants Inc., 1700 E. Golf Road, Suite 1132, Schaumburg, IL 60173.

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The National Advanced Driving Simulator (NADS) and the Industry/ University Cooperative Research Center for Virtual Proving Ground Simulation has open positions for people with broad expertise in driving simulation technology, with focus in the modeling and simulation of vehicle systems. Responsibilities include the formulation of long term research goals and the continuous supervision and participation of the implementation of these goals. Specifically, the successful candidate(s) will be responsible for leading development groups in projects dealing with vehicle systems modeling and simulation including (but not limited to) multibody mechanical systems, vehicle subsystem, tire-soil interaction, vehicle geometry CAD based representation and animation, and general vehicle dynamics simulation software development and integration. Additional responsibilities include the authoring of proposals in obtain new or sustain current funding, authoring of papers and reports and supervision of staff and students. These positions require excellent communication skills with the ability to work with faculty, graduate research assistants, and staff from diverse fields, as well as maintaining direct customer contacts. A Master's degree in Mechanical Engineering or Physics, or an equivalent combination of education and experience is necessary. Doctorate preferred. Two years experience in leading technical groups developing vehicle systems modeling and simulation software is necessary as is expertise in C and FORTRAN programming languages, DADS modeling and simulation package, SIMULINK/Matlab modeling and simulation package, and Easy5 and vortex control tools. Familiarity with high fidelity driving simulation is highly desired. Salary is commensurate with experience. Send letter of interest with resume and names of three references to: Mary Bender, NADS and Simulation Center, 2401 Oakdale Blvd, University of Iowa, Coralville, IA 52241. The University is an equal opportunity affirmative action employer. Women and minorities are encouraged to apply.

Senior Consultant needed for software development and consulting firm located in Oak Brook, Illinois. Job duties include Analyze, design, develop, test and implement client server applications. Write data scripts and stored procedures in SQL and PL/SQL. Also, use Windows NT, Novel OS, C, C++, MS ACCESS, HTML, Oracle database, Oracle Developer 2000, Oracle Workgroup 2000, Sybase, Visual Basic, and Powerbuilder. Applicant must have M.S. degree in Computer Science. Will also accept B.S. in Computer Science and 4 yrs. exp. in skills listed above. Applicant must also have 2 yrs. exp. in the job duties described above or as a Programmer Analyst or Systems Analyst which includes 2 yrs. exp. designing and developing client server applications with Oracle, SQL, and Visual Basic; and 6 mos. exp. with Sybase and Powerbuilder. 40hrs/wk, 8:00 am - 5:00 pm, Mon-Fri, $74,080/yr. Send 2 copies of both resume and cover letter (NO CALLS) to: Illinois Department of Employment Security, 401 South State Street - 7 North, Chicago, Illinois 60605, ATTN: Jean Sykstus, Ref#V-IL19643-S. Must have proof of legal authority to work permanently in the U.S. AN EMPLOYER PAID AD.

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The National Advanced Driving Simulator (NADS) and the Industry/University Cooperative Research Center for Virtual Proving Ground Simulation has open positions for people with broad expertise in driving simulation technology, with focus in the modeling and simulation of hybrid electric vehicle systems. Responsibilities include the formulation of long term research goals and the continuous supervision and participation of the implementation of these goals. Specifically, the successful candidate(s) will be responsible for leading development groups in projects dealing with hybrid electric vehicle systems modeling, simulation and optimization including (but not limited to): induction machines, control systems for general electric motors, energy storage, and energy management systems. Also, development of real-time models using advanced computational methods and simulation software integration. Additional responsibilities include the authoring of proposals in obtain new or sustain current funding, authoring of papers and reports and supervision of staff and students. These positions require excellent communication skills with the ability to work with faculty, graduate research assistants, and staff from diverse fields, as well as maintaining direct customer contacts. A Master's degree in Electrical Engineering, or an equivalent combination of education and experience is necessary. Doctorate preferred. Two years experience in leading technical groups developing hybrid electric vehicle systems modeling and simulation software is necessary as is expertise in C and FORTRAN programming languages, DADS modeling and simulation package, SIMULINK/Matlab modeling and simulation package, Easy5 and vortex control tools. Familiarity with high fidelity driving simulation is highly desired. Salary is commensurate with experience. Send letter of interest with resume and names of three references to: Mary Bender, NADS and Simulation Center, 2401 Oakdale Blvd, University of Iowa, Coralville, IA 52241. The University is an equal opportunity affirmative action employer. Women and minorities are encouraged to apply.

Programmer Analyst. Develop, maintain, code & install applications using econometric models designed by economicians/statisticians to support on-going research/presentational activities. Use SUN computer with C & UNIX commands to access large database across LAN. Perform data aggregation/conversion from EBCIDIC to ASCII & Binary data types, output report formatting, verification/audit of data. Perform quality assurance of projects completed by jr programmers. Maintain log of on-going/completed project on WEB using HTML. Skills/tools C, C++, SAS, UNIX, HTML. Masters in Comp Sci, Comp Engr., or Electrical Engr + 6 mos exp in job offered or an Programmer or Consultant required. Previous exp must include C, UNIX. Graduate Coursework must include one course each on Data Structure Operating System Design & Implementation, & Object Oriented Programming. 40hrs/wk. 8am-5pm. $48,000/yr. Must have proof of legal authority to work permanently in the U.S. Send two copies of both resume and cover letter to: ILLINOIS DEPARTMENT OF EMPLOYMENT SECURITY, 401 South State Street - 7 North, Chicago, IL 60605, Attention: Lotte Jacksam, Reference #V-IL-18470-J. NO CALLS. An Employer Paid Ad.

SYSTEM ADMINISTRATORS
JOB ANNOUNCEMENT

The National Advanced Driving Simulator (NADS) and the Industry/University Cooperative Research Center for Virtual Proving Ground Simulation has multiple openings of various levels in the computing systems manager, client and administration areas. The Center is a computing intensive research facility using a variety of HP, SGI, Sun and WinNT workstations within a networked environment. The successful candidates must be service oriented individuals who will support the research staff, faculty and students with their computing needs while maintaining the overall computing resources. Responsibilities for the positions include the following: Develop, support and implement the procurement, installation and troubleshooting of networked UNIX workstation and PC running WinNT. WS/Server Manage the existing network and monitor performance and utilization. Maintain workstations by updating operating systems and commercial software. Help prepare the computing support budget, monitor expenditures and provide monthly expenditure reports. Suggest and implement improvements based on user requirements. Support commercial [illegible] on Center platforms. Manage UNIX & WinNT accounts. Develop and implement backup strategies for the Center. Monitor computing systems for overall utilization, security, and [illegible] web server(s). [illegible] develop [illegible] to aid system administration tasks, prepare [illegible] materials and give [illegible] courses to expert users. [illegible] user community [illegible] about available resources. When necessary, participate in [illegible] and provide technical support for the development of proposals. Manage system [illegible] support staff and student workers. Applicants must have a BS, or MS in a [illegible] or related field, or equivalent education and/or experience. For the senior positions, candidates should have budget [illegible] and implementation experience with UNIX systems [illegible] preferably SGI, HP, and [illegible] required as well as experience administering WinNT including [illegible] a WinNT [illegible] Experience in computer programming in UNIX and WinNT necessary. Experience with scripts using Pearl, CGI, C-shell awk, or similar languages is highly desirable as is experience in the deployment of WinNT Server in a networked environment. Experience with Web Server setup, administration and security is highly desired. Experience in interacting with and training users is highly desirable. Experience in a mixed UNIX/WinNT environment is also highly desired, as is experience with providing systems administrative services in an academic, commercial or research oriented organization. A positive attitude and excellent communication skills are necessary. Yearly salary is between 33k and 43k depending on qualifications and experience. Send letter of interest, with resume, salary requirements and names of three references to: Mary Bender, NADS and Simulation Center, W310 OH, University of Iowa, Iowa City, IA 52242-5000. The University is an equal opportunity affirmative action employer. Women and minorities are encouraged to apply.

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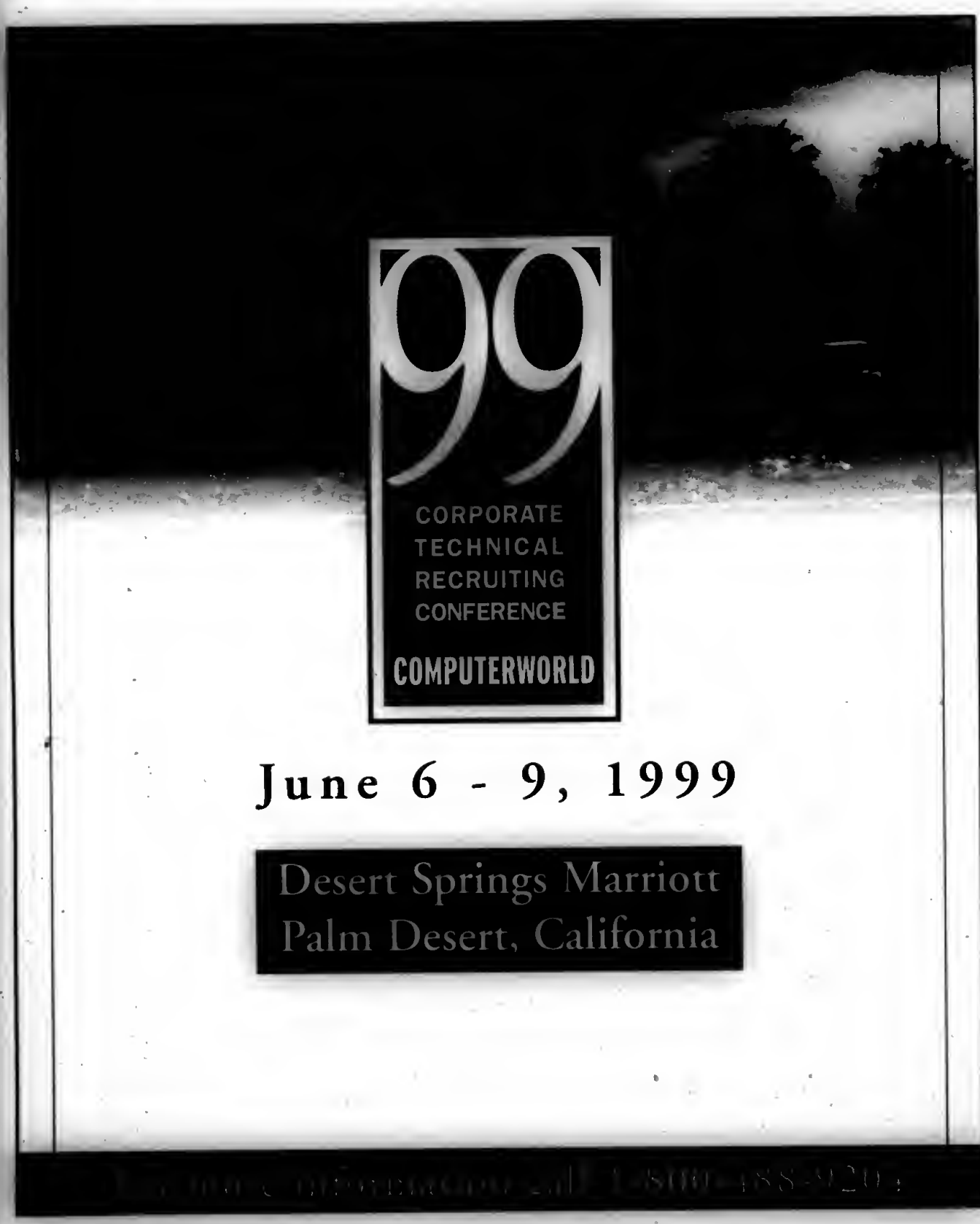

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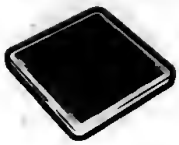

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HP's revenue stall

Hewlett-Packard Co. (NYSE:HWP) may have beaten the Street last week, but analysts warn that the company's weak fourth quarter signals the need for further belt-tightening. That's bad news for HP stock, at least in the short term.

HP last week reported fourth-quarter earnings of $280 million, or 79 cents per share, excluding extraordinary expenses. That surpassed the expectation of 74 cents per share, a consensus estimate by analysts polled by First Call. But revenue for the same period grew less than 4% to $12.2 billion, compared with $11.8 billion a year earlier.

"HP had low topline growth, decided the numbers needed to come down and has warned that the first half of the year would be difficult," says Thomas Kraemer, an analyst at Morgan Stanley Dean Witter in New York. "You've got some potential for margin and revenue risks driven by two product transitions: one in the LaserJet group, and one in Unix servers." Add to that mix a pledge to invest more in research and development, coupled with a competitive pricing environment for ink-jet printers, and the result spells challenges for the world's No. 3 computer maker.

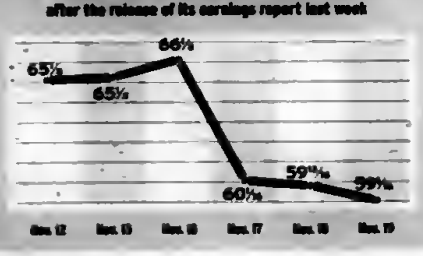
HP's stock began to slide last week immediately after its earnings announcement. HP said that despite strong sales of its LaserJet printers and PCs, revenue growth remained sluggish, partly because of the troubled economies in Asia and Latin America.

"The lower volumes year-over-year are putting pressure on their top lines. So while they're making [earnings per share] numbers, their revenue growth looks pretty anemic," says John Jones Jr., an analyst at Salomon Smith Barney in San Francisco.

He said HP's challenge is simple: Find a path to topline growth. — Tom Diederich

HP TAKES A DIP

Hewlett-Packard's stock dropped about 10% after the release of its earnings report last week



Exch	52 Week	Range	Nov. 08 Wk Net Close	Wk Net Change	Wk Pct Change
Software					
ADBE	57.87	25.63	Adobe Systems Inc	45.13	0.75	1.7
AZPN	56.87	6.12	Aspen Technology Inc	18.00	-0.38	-2.0
ADSK	50.00	21.62	Autodesk Inc	33.00	0.06	0.2
AMD	47.75	11.00	Amd Technology	31.25	1.75	7.0
BOOL	62.00	18.06	Bindley & Baerwage Inc. (H)	50.00	0.00	0.2
CDN	50.00	19.12	Cadence Design Systems	28.75	0.50	1.7
CBTSY	63.87	6.68	Cbt Group Plc	11.34	0.16	1.3
CHKPF	50.50	18.87	Checkpoint Software	50.25	1.19	4.2
CTXS	84.13	88.37	Cytrix Systems Inc. (H)	84.13	6.75	8.7
COGNF	80.50	14.75	Cognos Inc	20.25	2.69	19.3
CA	61.38	26.00	Computer Associates I	40.63	-4.22	-9.4
CPWR	63.00	27.63	Compuware Corp	38.00	1.88	3.3
DCTM	59.62	16.75	Documentum	41.25	2.75	7.1
EFII	31.50	12.87	Electronics For Imaging	21.00	-0.81	-2.9
HNCS	47.12	22.50	Hnc Software	32.19	0.88	2.7
SDRC	55.75	28.37	Ide Systems	43.56	0.63	1.5
IFMX	10.44	5.50	Informix Software Inc	3.75	-0.00	-0.5
INTU	67.94	30.25	Intuit	57.63	2.00	3.6
JRMY	13.00	24.00	Jack Henry And (H)	13.00	4.44	0.1
LCTO	58.18	18.00	Legato Systems Inc	47.00	6.58	15.7
MACR	25.81	3.12	Macromedia Inc	24.44	0.94	3.9
MANU	86.37	6.52	Manugistics Group Inc	9.44	5.11	36.0
MENT	11.81	5.43	Mentor Graphics	8.25	0.00	0.0
MSFT	118.62	54.00	Microsoft Corp	111.44	3.31	3.1
NETA	56.87	25.00	Network Associates	41.00	-0.56	1.3
CNSH	37.87	58.37	Network General	35.63	-4.00	11.2
NOVL	16.00	8.85	Novell Inc (H)	10.72	2.61	10.8
ORCL	250.7	17.75	Oracle Corp	34.31	1.47	4.5
PMTC	36.31	0.50	Parametric Technology Corp	13.44	0.81	5.0
PSFT	57.42	18.57	Peoplesoft Inc	21.63	0.50	2.4
PIXR	66.00	19.50	Pixar	53.56	8.00	17.6
PLAT	34.31	9.00	Platinum Technology Inc	17.00	-0.75	-4.2
RATL	27.00	9.50	Rational Software Corp (H)	24.44	1.44	6.3
SAP	80.12	50.68	SAP AG	63.12	2.63	4.0
SCUR	40.62	6.37	Security Dynamics Corp (H)	20.56	3.63	21.4
SB	50.25	20.12	Siebel Systems Inc	33.94	-0.81	-2.3
SSW	32.81	13.25	Sterling Software Inc	25.81	0.50	1.5
SDRC	58.00	7.50	Structural Dynamics Research	17.84	0.34	2.0
SYBS	10.12	4.00	Sybase Inc	6.44	0.06	1.0
SYMC	87.62	0.00	Symantec Corp	18.44	1.56	8.9
SNPS	50.00	24.50	Synopsys (H)	49.00	2.50	5.5
SCTC	30.87	0.00	Systems & Computer Technology	16.62	0.00	0.0
BAANF	53.00	9.56	Tan Baan Co N V	13.50	1.00	7.4
VNTV	39.75	3.00	Tele Vantive Corp	9.00	0.62	6.5
TSAI	43.00	27.00	Transl. Sys. Arch	38.63	1.13	3.0
VRTS	68.25	23.75	Veritas Software Corp	55.56	8.56	10.6
WIND	53.63	28.00	Wind River Systems Inc	48.50	2.56	5.8
Communications						
ATI	80.62	37.33	Airtouch Communications	55.00	2.25	4.3
AT	51.88	37.13	Alltel Corp (H)	51.88	2.13	4.3
ART	56.19	37.09	Ameritech Corp (H)	56.19	1.56	0.8
ANDW	30.06	10.87	Andrew Corp	17.34	-0.16	-0.9
T	60.50	40.37	At&T	44.00	1.38	2.2
BCE	50.62	25.62	Bce Inc	35.19	1.56	4.6
BEL	59.12	40.43	Bell Atlantic (H)	56.25	2.44	4.5
BLS	40.75	52.81	Bell South	41.00	1.00	2.6
CSN	28.62	20.87	Cincinnati Bell Inc	20.00	1.31	4.0
CMCSK	31.62	23.03	Comcast	49.94	2.31	4.9
CQ	42.75	29.62	Comsat Corp	26.62	1.62	4.2
CCN	66.00	32.50	Cox Communications Inc	55.00	0.19	0.3
GSTRF	17.12	8.31	Gilmanstan Telecom Ltd	10.50	2.25	11.8
CTR	37.37	20.50	Ctc Corp	62.94	3.50	5.9
NXTL	54.12	13.37	Nextel Communications	25.00	0.69	3.1
SPOT	80.12	30.50	Paramount	34.44	1.81	4.7
QCOM	80.93	37.75	Qualcomm	55.94	1.00	1.9
SBC	89.38	34.31	Sbc Communications (H)	89.38	2.31	4.0
FON	87.19	54.60	Sprint Corp (H)	82.19	4.00	5.1
TCOMA	44.38	17.00	Tele-Communications	47.00	2.00	5.0
TDS	80.13	30.62	Telephone And Data Systems	41.63	1.50	3.3
USW	60.13	42.56	Us West (H)	60.13	2.75	4.8
VIA	66.37	32.25	Viacom	57.31	1.38	5.3
WCN	80.12	30.25	Winstar Communications Inc	60.00	0.50	1.3
WCOM	59.31	38.50	Worldcom Inc (H)	57.44	1.94	3.3
Computer Services						
ACSM	28.25	13.37	Acsiom Corp	25.00	-0.50	2.0
ACS	39.81	21.50	Affiliated Computer Servs (H)	38.00	0.63	1.6
ANCY	24.50	18.75	Ancillian Mkt Systems	20.19	-0.91	2.9
AUD	64.31	54.00	Automatic Data Processing	79.81	0.00	0.0
BSYS	50.00	30.75	Bisys Group Inc (H)	49.50	-0.63	1.3
CATP	36.37	11.87	Cambridge Technology Partn	18.38	3.00	14.4
CBN	64.00	42.37	Ceridian	36.00	0.50	1.0
CSP	30.87	11.31	Cmgi Inc	18.19	1.00	14.2
CDO	31.25	12.93	Computer	18.44	-0.50	-2.6
CMRZ	31.50	17.25	Computer Horizons Corp	24.19	0.00	2.7
CSC	74.87	37.00	Computer Sciences	55.44	3.88	7.4
DST	70.56	34.00	Dst Systems Inc	52.31	2.63	5.3
EDS	50.87	30.43	Electronic Data Systems	38.56	1.31	3.5
FISC	30.00	19.00	First Data Group	37.06	0.81	2.5
FISV	89.37	38.37	Fiserv	47.62	1.00	0.7
IT	41.75	17.31	Gartner Group	19.75	0.75	3.7
HBOC	50.37	20.50	Hbo & Co.	35.00	2.94	12.9
HEA	80.93	24.75	Hcia	35.00	-0.50	0.3
NDC	46.00	40.50	National Data	17.19	1.25	0.6
PAYX	34.00	08.12	Paychex Inc (H)	33.25	-0.13	-0.2
RECI	31.75	6.62	Renaissance Worldwide	1.31	-0.50	-0.4
RBY	24.00	12.62	Reynolds & Reynolds	21.00	0.70	3.0
SFI	45.37	17.12	Safeguard Scientifics	27.00	1.63	5.0
SAFE	62.00	24.25	Safeguard Corp	60.31	1.25	2.0
SMS	80.50	80.00	Shared Medical Systems	60.91	1.50	3.3
SDS	60.00	21.00	Sungard Data Systems	32.44	1.00	5.4
SYNT	87.62	8.62	Synetic Inc	18.44	1.50	8.9
TECD	53.12	33.75	Tech Data	39.75	-0.03	-0.1
TSS	25.00	13.50	Total System Services, Inc	22.31	1.56	0.0
TSAI	43.00	27.00	Transaction Sys Architects	38.63	1.13	3.0
Miscellaneous						
COMS	80.50	32.69	3Com Corp (H)	39.81	4.94	14.2
ADCT	64.62	35.75	Adc Telecommunications Inc	50.00	2.31	7.9
AMTC	25.00	10.37	Amtec	38.94	0.38	2.0
ASND	55.21	22.00	Ascend Communications Inc. (H)	54.25	1.50	2.2
BAYN	33.37	2.12	Bay Networks Inc	4.69	-0.56	10.7
CS	37.62	6.62	Cabletron Systems	13.75	3.00	17.8
CNFBF	60.00	5.75	Call-Net Enterprises (L)	8.75	0.47	5.5
CSCO	79.87	31.62	Cisco Systems Inc. (H)	74.31	6.94	13.7
ECILF	38.68	19.75	Eci Telecom	43.50	1.13	3.5
FORE	28.00	8.25	Fore Systems Inc	20.69	2.25	16.6
HRS	55.21	27.56	Harris Corp	38.00	0.25	0.7
GMH	87.87	50.37	Hughes Electronics/Gm	57.63	-4.50	13.2
LDRCY	64.00	12.00	Lm Ericsson	25.00	2.50	10.0
LU	108.50	30.50	Lucent Technologies	86.25	2.75	3.3
MADGF	7.75	3.75	Madge Networks	5.00	0.50	33.1
NCDI	13.75	8.37	Network Computing Dev	7.56	-0.68	-7.8
NWK	20.62	8.00	Network Equipment Tech	11.00	0.23	2.2

Exch	52 Week	Range	Nov. 08 Wk Net Close	Wk Net Change	Wk Pct Change
NN	48.00	15.43	Newbridge Networks	31.44	3.81	17.6
NOK.A	98.00	31.62	Nokia Corp (H)	97.63	7.50	8.2
NT	69.25	26.81	Nortehn Telecom Ltd	47.94	3.50	7.9
PAIR	35.25	6.00	Pairgain Technologies Inc	11.13	1.13-	11.3
PCTL	11.94	4.75	Picturetel	6.88	-0.38	3.3
SFA	37.88	11.75	Scientific Atlanta	16.88	-0.44	2.5
SIHVA	14.87	2.75	Sihvia	3.88	0.00	0.6
TLAB	83.12	31.37	Tellabs Inc.	56.18	-2.63	-4.6
USW	80.13	42.56	Us West (H)	60.13	2.75	4.8
VRLK	11.18	2.87	Verilink	5.38	1.00	22.9
WSTL	21.75	2.75	Westell Technology Inc	6.44	-0.50	-9.4
XYLN	31.31	8.62	Xylan	20.06	1.00	9.2
Semiconductors						
ADPT	31.25	7.87	Adaptec	18.00	1.81	11.2
AMD	31.00	9.31	Advanced Micro Devices	27.31	-0.19	-0.7
ALTR	52.56	28.25	Altera	52.63	3.25	6.6
ADI	58.62	12.00	Analog Devices	21.13	2.81	11.7
AMAT	58.50	21.38	Applied Materials	39.13	0.81	2.1
ASMLF	49.00	12.93	Asm Lithography Holding	38.56	0.75	2.7
HRS	33.31	27.56	Harris Corp	38.00	0.25	0.7
INTC	113.18	69.62	Intel Corp (H)	111.44	7.19	6.9
XLNC	48.50	20.75	Xla Instruments	37.00	-0.31	-0.8
LLTC	81.37	38.12	Linear Technology	60.63	1.88	1.6
LSI	25.37	10.50	Lsi Logic	16.44	0.13	0.3
MXIM	44.68	22.11	Maxim Integrated Products (H)	41.38	1.31	3.3
MU	48.00	60.00	Micron Technology	40.50	2.44	5.4 -
MOT	67.00	50.37	Motorola	60.75	5.69	10.2
NSM	36.31	7.43	National Semiconductor	15.00	0.75	5.2
STM	91.75	53.87	Scs-Thomson Microelectronics	70.50	1.13	1.6
SLR	68.00	28.87	Selectron Corp (H)	65.50	2.31	3.7
TER	48.43	15.00	Teradyne	34.44	0.75	2.2
TXN	78.87	39.62	Texas Instruments (H)	75.44	0.06	10.0
UNPH	65.62	01.25	Unipharm	57.00	1.00	1.9
VTSS	37.18	13.81	Vitesse Semiconductor Corp	35.31	1.38	9.1
XLNX	55.00	29.75	Xilinx (H)	52.88	1.63	3.2
Systems						
AAPL	43.75	12.75	Apple Computer Inc	31.25	-0.50	-1.4
ASPX	13.00	1.62	Aspen Systems	3.44	0.06	1.8
CPQ	38.00	22.93	Compaq	34.25	0.75	2.2
DGN	23.31	7.00	Data General	17.63	1.00	6.0
DELL	59.50	18.81	Dell Computer Corp	53.44	1.31	2.0
GTW	68.75	26.63	Gateway 2000 Inc	36.63	1.44	4.5
HWP	83.37	47.00	Hewlett Packard Co	50.31	7.13	10.0
HIT	68.68	30.18	Hyracom Ltd	58.75	5.50	10.3
IBM	161.37	95.87	Ibm (H)	150.94	2.50	1.7
MLXS	24.75	8.43	Micronix	22.50	0.63	2.8
MOT	67.68	48.37	Motorola	60.75	5.69	10.3
NATI	36.50	17.56	National Instruments Corp	30.62	1.00	3.4
NCR	38.37	23.50	Ncr	30.00	0.31	0.9
NIPNY	61.87	31.00	Nec	43.38	3.00	9.0
PRCM	18.00	3.50	Procom Tech Inc	9.50	0.28	3.2
SQNT	24.12	5.00	Sequent Computer Systems	12.50	0.38	3.1
SGI	36.00	7.37	Silicon Graphi	12.94	0.13	1.0
SNE	97.18	80.25	Sony	75.44	9.63	9.9
SUNW	68.81	34.43	Sun Microsystems (H)	60.13	8.19	13.7
TEXM	5.37	2.00	Texas Micro	3.75	0.19	5.1
TRCD	1.56	0.37	Tricord Systems	0.88	-0.16	15.2
UNI	80.00	11.50	Unisys	27.44	0.25	0.9
Internet						
AMZN	175.50	24.25	Amazon Com (H)	134.44	46.56	58.0
AOL	80.00	17.93	America Online (H)	82.69	12.47	17.8
ATHM	37.25	10.31	Athome Corp	35.31	6.00	0.6
CKFR	31.50e	5.75	Checkfree	14.56	1.00	11.5
CHKPF	50.50	10.87	Checkpoint Software	50.25	1.19	4.2
CYCH	27.75	5.87	Cybercash Inc	11.00	1.31	32.4
EDFY	80.87	4.62	Edify Corp	5.56	-0.31	3.3
ECAP	35.25	10.00	E*Trade Group Inc	24.13	5.75	7.8
XCIT	57.25	10.81	Excite, Inc (H)	40.50	0.44	0.9
SEEK	45.00	7.75	Infoseek	32.56	1.13	3.5
LCOS	68.75	13.87	Lycos, Inc (H)	80.75	9.56	10.3
NSCP	43.25	14.87	Netscape Communications (H)	38.31	30.75	50.0
OMKT	30.12	4.25	Open Market Inc.	7.50	-0.50	-4.0
OTEXF	32.50	8.25	Open Text Corp	17.25	3.56	25.5
PSIX	21.93	4.25	Psinet	18.00	0.59	4.0
QDEX	3.00	0.25	Quarterdeck Corp (H)	0.31	0.01	2.2
SDTI	62.75	5.43	Security Dynamics	12.00	1.38	80.9
SPYG	20.00	4.06	Spyglass Inc. (H)	17.63	0.81	4.8
YHOO	158.37	24.00	Yahoo! Inc (H)	109.94	17.44	18.5
Utilities						
ADPT	51.25	3.87	Adaptec Inc	18.00	1.81	11.2
AMCC	69.50	22.13	American Power Conversion (H)	44.31	1.88	-4.1
CANNY	25.87	17.00	Canon Inc.	21.94	-0.00	-0.1
DBD	33.31	10.13	Diebold Inc	10.75	0.13	0.6
EK	80.94	53.31	Eastman Kodak Co.	76.18	1.62	2.0
EMC	70.50	23.50	Emc (H)	30.06	2.75	8.1
IOM	16.75	2.93	Iomega	8.12	0.69	8.3
LXK	80.00	50.56	Lexmark International Group	78.19	2.00	2.7
QNTM	80.00	10.81	Quantum	60.50	0.75	1.0
SEG	31.50	30.12	Seagate Technology (H)	60.99	3.25	6.2
STK	51.12	20.12	Storage Technology	37.31	6.00	19.4
TEK	80.18	13.68	Tektronix	49.13	4.63	22.0
XRX	110.00	80.18	Xerox	107.13	7.80	7.7

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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It's cost-cutting time

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Other priorities include building a robust communications infrastructure for the company and its suppliers and reviewing all application development.

Unger, who is based in Auburn Hills, Mich., has a battle plan that calls for cutting costs by reducing the number of computer systems the company uses, stopping development and/or use of certain applications, working with suppliers to reduce parts costs and getting sites on a common lower-cost network.

With work ongoing on virtually every front and pressure mounting to cut costs, Unger decided against outsourcing. "We prefer to work hand-in-hand with our suppliers," she said. "This allows you to retain your best and brightest. When you outsource, you lose them. Abdicating management is a big mistake." She claimed she hasn't lost an IT staffer since the merger was announced.

Chicago-based consulting firm A.T. Kearney Inc. estimates that Chrysler has about 2,000 IT staffers. It had no estimate for Daimler.

DUCKS IN A ROW

One expert said Unger has a solid battle plan.

"It sounds like she has her priorities in order," said Dennis Virag, president of Automotive Consulting Group in Ann Arbor, Mich. "Better controlling costs enables better control of quality and time to market, which provides a competitive edge in the marketplace."

The CIO wouldn't divulge the combined head count or annual information technology budget of the $75 billion DaimlerChrysler.

Unger said she intends to be relentless in her quest to cut costs. In at least one case, she will lean on a tried-and-true program to help.

"One of the keys to meeting the savings goals is to extend our successful Supplier Cost Reduction program [Score] overseas," Unger said. With Score, suppliers enter ideas on saving money into a Notes-based system, and the ideas are reviewed by all key departments within DaimlerChrysler for comment and possible approval. "We had 26,000 ideas over five years at Chrysler that saved $1.5 billion."

Another part of the plan is to eliminate the variety of systems the company uses. "We want to reduce the platforms because it will slash supports costs. We're looking at which to retain now," Unger said. Chrysler and Daimler both used multiple platforms, but Unger wouldn't say how much she expects to save.

The CIO also said she hopes to cut communications costs by 30% to 40% and support suppliers by getting Daimler and its providers on the Automotive Network Exchange, a North American virtual private network that went live in September and likely will be extended to Europe and Japan.

On yet another front, Unger's crew will "take a hard look at all application development and decide which to promote and which to sunset," she said. "In a few months, I'll be able to rattle off a number of ones that will be dropped."

But before the company could launch its aggressive cost-cutting efforts, Unger and her staff had to set up the network infrastructure needed to make sure employees on two continents could communicate.

That was accomplished by linking the two automakers' Lotus Notes E-mail systems, building an intranet that took 3 million hits on Day 1 alone and installing a T1 line to carry phone calls between the two far-flung headquarters — all in about two months.

Virag said Unger's communications efforts are key, as "managing the flow of information to suppliers, dealers and consumers is critical to the success of the venture."

The CIO said she thinks cultural issues are overblown.

"Everybody has been open-minded, willing to listen to ideas and have no preset agendas," Unger said. □

All quiet on year 2000, euro fronts

Although it may not require huge amounts of work, DaimlerChrysler's year 2000 program is under the watchful eye of CIO Susan Unger. European companies generally are further behind on year 2000 projects than U.S. companies. The entire company, including Daimler, plans to be year 2000-compliant by the second quarter of next year.

"There's always the unexpected, but things look fairly good," Unger said.

And as far as the euro issue is concerned, Unger isn't worried. "Daimler is done with its conversion, and Chrysler's target is the end of the year," she said. — Bob Wallace

MOREONLINE

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IT escapes oil cuts

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ing potential gushers to shaving production costs by cents per barrel. Consequently, even with the per-barrel price of crude oil at an 11 1/2-year low of less than $12, analysts are predicting that most oil companies will look beyond IT for places to cut jobs and budgets — at least initially.

But how long IT's reprieve holds will depend largely on how long weak demand — caused by the economic crisis in Asia — lasts.

"Growth in Asia has really been the linchpin of the oil industry for the past 10 years," said Peter Fusaro, president of Global Change Associates, an oil industry consultancy in White Plains, N.Y.

But for now, IT budgets don't appear to be losing ground. Instead, industry IT executives report flat spending between this year and next.

"IT increases a company's ability to operate with fewer people," noted Lysle Brinker, a senior petroleum analyst at John S. Herold Inc., a Stamford, Conn., consultancy. As a result, "it follows that IT would experience less ill effects of layoffs and cutbacks," Brinker added.

That's the case at Kerr McGee Corp. in Oklahoma City, where an ongoing year 2000 project and another Oracle Corp. enterprise software project have been declared off-limits to corporate budget cutters.

"[IT] people working on these projects are being kept outside the cost crunch and reductions in force, which has allowed us certainly to enjoy one of the more active periods of IT projects," said Dave Bender, an IT manager in the company's Houston-based exploration and production division.

New IT initiatives are regarded with increased scrutiny, Bender acknowledged, but he noted that reductions made so far relate mostly to general administrative expenses, such as travel.

Similarly, at Mobil Corp.'s shared IT services unit in Dallas, applications architect Tom Nash said he expects the IT budget and employee head count to remain stable through next year. And less than two weeks ago, $34 billion Mobil announced it would cut capital spending by $500 million.

"But the cuts won't ripple to IT just yet [because] there's so much of the company that needs IT. It's hard to break off pieces of it," Nash said.

Also, Mobil's IT group already took a big hit in 1995, losing 30% of its staff as part of companywide restructuring designed to save $1 billion.

Now, one of Mobil's key ongoing IT initiatives is integrating data from dozens of exploration and production projects into a "master data store" at each business unit.

"The idea is to preserve the data store once a project is completed, so later on as you revive the project, you've saved the data and the knowledge," Nash said.

That's especially critical as companies return to existing oil fields and analyze data for ways to boost production with newer steam and water injection techniques.

"Getting quality integrated data is key to utilizing reservoirs before they expire," said Struby Overton, business development manager at Petrochemical Open Software Corp., a nonprofit industry standards group in Houston.

At Mobil, the data integration work so far has paid off. "We use to spend 40% of our time looking for data. Now, we're in the 10% range," Nash said. □

OIL COMPANIES RETRENCH

Texaco Inc.
White Plains, N.Y.
Announced $34 billion reduction in capital spending; plans to lay off 1,000 workers
Annual revenue: $45 billion
Major projects: Knowledge management, global communication

Phillips Petroleum Co.
Bartlesville, Okla.
Expects to reduce 1999 capital spending by $500 million
Annual revenue: $15 billion
Major projects: SAP/Oracle Energy

Mobil Corp.
Fairfax, Va.
Will cut 1999 spending by $500 million
Annual revenue: $34 billion
Major projects: Enterprise data integration

ROI presses CIOs to retool

CONTINUED FROM PAGE 1

due diligence we do when evaluating other companies is around [IT] systems," Carney said.

However, becoming a top adviser to the CEO has meant "getting a handle on the business, including its competitors and partners," all the while staying connected to his technical roots in order to preserve credibility with the IT staff, Carney said.

"A lot of the due diligence we do when evaluating other companies is around [IT] systems."
— Rick Carney, Staten Island University Hospital

Brian Kilcourse, CIO at Longs Drug Stores Inc. in Walnut Creek, Calif., said the role of CIO is shifting because "companies continue to demand greater benefit from their IT investment." In addition, as labor costs and IT spending overall have soared, CIOs have had to move closer to the top managers of the company in order "to negotiate for the resources to get technology projects done."

Joseph Smialowski, CIO at Sears, Roebuck and Co. in Hoffman Estates, Ill., said two of the top skills he looks for in IT managers are negotiating abilities and project management expertise. Smialowski himself, who will leave Sears next month for the top IT spot at BankBoston (see related stories, pages 4 and 39), has off-loaded about 40% of the IT work on his plate through outsourcing, leaving him free to focus on the business issues and improving the IT organization. His advice: "Dump as much technical, day-to-day stuff as possible."

Another approach to achieving the same goals is advocated at Commercial Financial, where the company recently split its IT department in two. A colleague of Horrocks' runs the day-to-day data processing, while Horrocks and about 35 others focus on highly strategic applications, such as data warehousing and knowledge management.

CHANGE IN THE WIND

A new study of 150 CIOs at U.S. companies by search firm Korn/Ferry International shows that 65% of CIOs believe that their job is changing. The role continues to evolve from that of a technical architect to one of strategic planner, the survey showed. But the study also suggested that CIOs are making headway in terms of their ability to get the attention of the top officers of the company. Forty-nine percent of the CIOs in the study sit on their company's board of directors, and 17% interact daily with the CEO.

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Is your role as CIO changing at the moment?

- Yes
- No

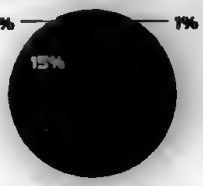
Note: responses have been rounded off

Base: 150 U.S. CIOs

Source: Korn/Ferry International, New York

... and their business knowledge is helping them most with this evolution

Is business experience outside IT necessary to succeed as CIO?



- Critically important
- Important
- Somewhat important
- Somewhat unimportant
- Unimportant
- No relevance

Separately, a survey of 600 CIOs released last week by El Segundo, Calif.-based Computer Sciences Corp. showed that the greatest challenge currently facing CIOs is the need to align IT strategies with business goals.

CIOs who struggle in their emerging role either "won't have the ability or confidence to assume their position as a business partner with the internal customers they support," Horrocks said, whose company is based in Tulsa, Okla.

Karen Rubenstrunk, an analyst at Meta Group Inc. in Stamford, Conn., agreed. She said a key attribute of the new CIO will be leadership. Increasingly, it will be important for CIOs to "develop a following and drive through decisions."

This represents a shift for IT, which has generally promoted those who were able to accomplish the most work, Rubenstrunk said. A CIO with strong leadership will be able to say "no" to projects that aren't good for the company, she said. □

To the Y2K ramparts!

CONTINUED FROM PAGE 1

Gieber, year 2000 program manager at Textron's Cessna Aircraft Co. unit in Wichita, Kan.

The concept of a central command post is hardly new to companies such as Sears, Roebuck and Co. The Hoffman Estates, Ill.-based retailer sets up a war room each year just before the five-week holiday shopping crunch to check systems performance, inventory levels and other operations at its 3,500 department stores, warehouses, credit facilities and other locations, said Keith Watkins, vice president of information systems services at Sears.

But this time around, Sears' command center will monitor a project that will last for more than a year.

During the millennium rollover, if the Columbus, Ohio, area, for example, loses power, telecommunications or water supplies or suffers some other disruption, Sears will be able to track that from command sites in Schaumburg, Ill., and Dallas, Watkins said.

In the event that regional outages knock out local, long-distance or cellular phone service, Sears is considering equipping its command staffs with walkie-talkies or ham radios. Watkins said he expects the Hoffman Estates command center to be staffed by "no more" than 10 IT and business managers, with personnel monitoring the situation from warehouses, stores and their homes.

While Sears finishes designing and building a year 2000 war room at its headquarters over the next three months, the company is using Watkins' office as a temporary command post. "It's a war cubicle," he joked.

Watkins said the command center, which is still in the design stage, will likely resemble a conference room fed by phone lines, with a corkboard wall holding maps and contingency procedures.

Irene Dec, year 2000 project director at Prudential Insurance Company of America in Newark, N.J., originally had planned to escape to a Caribbean island for four weeks beginning in late December 1999. "But if the phones don't work, and I don't know what's happening [at Prudential during the millennium change], it [will] drive me crazy," she said.

So instead, she will remain in Prudential's operations command center in New Jersey to monitor the company's millennium rollover. CIO Bill Friel and other executives will be able to log on to Prudential's secured intranet site to check the status of facilities throughout the world, Dec said. □

Senior editor Barb Cole-Gomolski contributed to this report.

MOREONLINE

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Flying shrapnel and margin calls

The National Association of Securities Dealers Inc. (NASD), which runs the Nasdaq Stock Market, already has a "crisis room" in its Trumbull, Conn., data center.

The room, which looks like a mini television studio, has two-way videoconferencing links to offices in New York, Washington and Rockville, Md. That lets executives such as NASD President Frank Zarb talk face-to-face with crisis managers and "see" what's happening during a market crash or another event, said Gregor S. Bailar, CIO and executive vice president at NASD.

Year 2000 project team members will be able to view graphic readouts on mainframe CPU utilization rates, transaction processing rates and other systems performance metrics.

During the year 2000 rollover, Zarb and other top brass at NASD will also be able to dial in to a secured Web site using software authentication tools and hardware security "tokens" to view systems performance rates after the ball drops in Times Square, Bailar said.

But Bailar said he suspects that Zarb and other NASD executives will opt for receiving a phone call for a status report "instead of having them wheedle through CPU graphs on our Web site" on New Year's Eve, he said. — Thomas Hoffman

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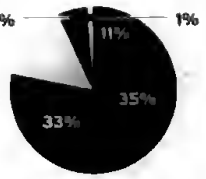

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Separately, a survey of 600 CIOs released last week by El Segundo, Calif.-based Computer Sciences Corp. showed that the greatest challenge currently facing CIOs is the need to align IT strategies with business goals.

CIOs who struggle in their emerging role either "won't have the ability or confidence to assume their position as a business partner with the internal customers they support," Horrocks said, whose company is based in Tulsa, Okla.

Karen Rubenstrunk, an analyst at Meta Group Inc. in Stamford, Conn., agreed. She said a key attribute of the new CIO will be leadership. Increasingly, it will be important for CIOs to "develop a following and drive through decisions."

This represents a shift for IT, which has generally promoted those who were able to accomplish the most work, Rubenstrunk said. A CIO with strong leadership will be able to say "no" to projects that aren't good for the company, she said. □

To the Y2K ramparts!

CONTINUED FROM PAGE 1

Gieber, year 2000 program manager at Textron's Cessna Aircraft Co. unit in Wichita, Kan.

The concept of a central command post is hardly new to companies such as Sears, Roebuck and Co. The Hoffman Estates, Ill.-based retailer sets up a war room each year just before the five-week holiday shopping crunch to check systems performance, inventory levels and other operations at its 3,500 department stores, warehouses, credit facilities and other locations, said Keith Watkins, vice president of information systems services at Sears.

But this time around, Sears' command center will monitor a project that will last for more than a year.

During the millennium rollover, if the Columbus, Ohio, area, for example, loses power, telecommunications or water supplies or suffers some other disruption, Sears will be able to track that from command sites in Schaumburg, Ill., and Dallas, Watkins said.

In the event that regional outages knock out local, long-distance or cellular phone service, Sears is considering equipping its command staffs with walkie-talkies or ham radios. Watkins said he expects the Hoffman Estates command center to be staffed by "no more" than 10 IT and business managers, with personnel monitoring the situation from warehouses, stores and their homes.

While Sears finishes designing and building a year 2000 war room at its headquarters over the next three months, the company is using Watkins' office as a temporary command post. "It's a war cubicle," he joked.

Watkins said the command center, which is still in the design stage, will likely resemble a conference room fed by phone lines, with a corkboard wall holding maps and contingency procedures.

Irene Dec, year 2000 project director at Prudential Insurance Company of America in Newark, N.J., originally had planned to escape to a Caribbean island for four weeks beginning in late December 1999. "But if the phones don't work, and I don't know what's happening [at Prudential during the millennium change], it [will] drive me crazy," she said.

So instead, she will remain in Prudential's operations command center in New Jersey to monitor the company's millennium rollover. CIO Bill Friel and other executives will be able to log on to Prudential's secured intranet site to check the status of facilities throughout the world, Dec said. □

Senior editor Barb Cole-Gomolski contributed to this report.

MOREONLINE

For a repository of year 2000 resources, links, articles and information, visit *Computerworld online*.

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Flying shrapnel and margin calls

The National Association of Securities Dealers Inc. (NASD), which runs the Nasdaq Stock Market, already has a "crisis room" in its Trumbull, Conn., data center.

The room, which looks like a mini television studio, has two-way videoconferencing links to offices in New York, Washington and Rockville, Md. That lets executives such as NASD President Frank Zarb talk face-to-face with crisis managers and "see" what's happening during a market crash or another event, said Gregor S. Bailar, CIO and executive vice president at NASD.

Year 2000 project team members will be able to view graphic readouts on mainframe CPU utilization rates, transaction processing rates and other systems performance metrics.

During the year 2000 rollover, Zarb and other top brass at NASD will also be able to dial in to a secured Web site using software authentication tools and hardware security "tokens" to view systems performance rates after the ball drops in Times Square, Bailar said.

But Bailar said he suspects that Zarb and other NASD executives will opt for receiving a phone call for a status report "instead of having them wheedle through CPU graphs on our Web site" on New Year's Eve, he said. — Thomas Hoffman

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Dispatches & images from the fringes of the electronic frontier

WEB YIELDS BEST OF BREED

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News to ponder

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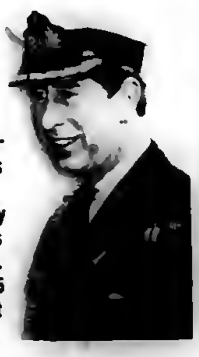
Rhode Island Soft Systems Inc. is offering another wacky screen design: the Turkey Shoot Screen Saver (*www.risoftsystems.com/turkey.asp*), which can be downloaded for free. In classic cartoon style, a jittery bird dodges arrows and bullets until it meets its doom, and then it pops back up with nary a ruffled feather.

Chuck's site is fit for a prince

Britain's Prince Charles launched his Web site (*www.princeofwales.gov.uk*) a few days before his 50th birthday earlier this month. It has 354 pages and 250 pictures, but only a few brief sentences about Princess Diana. The site recorded 1.75 million hits in its first 24 hours.



THE FIFTH WAVE *by Rich Tennant*

Inside Lines

Macy's: Sorry, no Levi's

There may be 250,000 items for sale at the new Macys.com Web site, but you won't find clothing from Levi Strauss among them. Macys.com President Kent Anderson said Levi Strauss asked Macy's not to sell Levi's goods online, apparently so it wouldn't conflict with Levi's own Internet store, which is slated to go live this week at *www.levi.com*. A spokesman for Levi Strauss in San Francisco confirmed that the company has "decided that we are going to be in charge of managing our brands on the Internet environment, at least initially." Anderson said he hopes the channel conflict eventually will be sorted out.

We suspected as much

Comdex/Fall '98 isn't just a big deal for software and hardware vendors and Las Vegas' hotels, restaurants, casinos and taxi drivers. Las Vegas television news reports last week confirmed that during the huge computer show, local strip clubs beef up their shows with adult film stars, extra prostitutes are called in from around the U.S. to "patrol" the Las Vegas strip, and X-rated shows are turned into XXX-rated shows. Apparently, Comdex attendees — once notorious as undesirable nerds and lousy tippers who rarely left the show floor — have become some of the best customers in town.

Reporting to the boss

After running an installation of Oracle's manufacturing applications a few years back, Jeff Smith told his wife he wouldn't take another job that involved an enterprise resource planning (ERP) project. Then, just a few months after becoming head of IT at AlliedSignal's automotive turbocharger unit in early 1996, he realized that what it really needed was . . . an ERP system. Smith told an audience at an AMR Research conference in Boston last week, "I was much more scared of going to my wife than I was of recommending to our president that we do the project."

Overheard

Paul Pinson, an information architect at Du Pont, on caffeine: "We used to run the business on big iron and black coffee. Now we run it on client/server and cappuccino." . . . A red-clad Elvis impersonator at Microsoft's Office 2000 Comdex party, on nerds trying to look cool by having their pictures taken on a Harley-Davidson motorcycle: "Well, that's got to be the sorriest sight I've ever seen." . . . Jim Ranager, systems administrator for the State Fire Academy of Mississippi in Jackson, Miss., on Intel's forthcoming 600-MHz laptop CPUs, due next year: "I can't believe that it was only 1991 that I was using a Sharp laptop with 640K of RAM, room for two 720 kilobyte floppies and a 4-MHz processor." . . . Rock star and diehard Macintosh user David Bowie, getting into trouble talking about his supermodel wife, Iman: "I'm a creative. Iman is a PC user. Which is not to say she isn't creative. She just has different needs."

Rumor mill

Wide-area network switch vendor Ascend Communications in Alameda, Calif., plans to build load-balancing technology from HydraWeb Technologies in New York. With the new technology, if one Web server fails, requests are redirected to provide uninterrupted service. . . . Lotus is denying rumors that it moved its Lotusphere '99 user conference to Jan. 17-21, a week earlier than its usual spot, because attendees complained they would rather watch the Super Bowl at home.

The master of ceremonies at one Comdex booth was trying in vain to find a gamble: "Who lost some money last night? How much? Last demo, we had a lady who lost $5,000," the emcee cried. But there were no takers. "You all aren't a risk-taking bunch," the emcee lamented. "Except those of us deploying NT," called out one audience member. High-stakes news editor Patricia Keefe is betting you'll send news tips and tidbits her way. E-mail her at patricia_keefe@cw.com or call (508) 820-8183.

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InsideLines

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